

THE
JOURNAL OF HORTICULTURE,
COTTAGE GARDENER,
COUNTRY GENTLEMAN,

BEE-KEEPER AND POULTRY CHRONICLE.

A JOURNAL OF GARDENING, RURAL AND DOMESTIC ECONOMY, BOTANY, AND NATURAL HISTORY.

CONDUCTED BY

GEORGE W. JOHNSON, F.R.H.S., AND ROBERT HOGG, LL.D.

THE FRUIT AND KITCHEN GARDENS, by Mr. J. Rogson, Gardener to Viscount Holmesdale, M.P., Luton Park; and Mr. T. Weaver, Gardener to the Warden of Winchester College.

THE FLOWER GARDEN, by Mr. G. Abbey, Stansty Hall; and Mr. J. Wills, Ashburnham Park Nursery, King's Road, Chelsea.

STOVE, GREENHOUSE, and WINDOW GARDEN, by Mr. R. Fish, Gardener, Putteridge Bury, near Luton.

FLORISTS' FLOWERS AND FLORICULTURE, by the Rev. R. H. Donbram.

GARDENING CALENDAR, by Mr. William Keane.

POULTRY-KEEPING, by Mr. J. Eddy, F. Hewitt, Esq.; and other well-known contributors.

PIGEONS, AVIARY BIRDS, &c., by "Wiltshire Rectory," W. A. Blackston, Esq., and others.

BEE-KEEPING, by H. Taylor, Esq.; T. W. Woodbury, Esq. "B. & W.," and Mr. S. Bryan Fox.

HOUSEHOLD APES, by the Authoress of "My Flowers," and others.



LIBRARY
OF THE
HORTICULTURAL
AND GARDENING
SOCIETY

VOLUME XIV., NEW SERIES.

VOL. XXXII., OLD SERIES.

LONDON:

PUBLISHED FOR THE PROPRIETORS, 171, FLEET STREET.

1868.

XI
L. 112.
John Jones
1868

LONDON:
PRINTED AT THE JOURNAL OF HORTICULTURE OFFICE,
171, FLEET STREET.

TO OUR READERS.

IN some work of fiction—"Abel Abhut," if we remember correctly—an old lady by way of variety wore her cap reversed, or "behind before," as is said in the nursery regions. The plan was simple, and we were tempted to adopt it on the present occasion: not literally, by so wearing our caps, but by copying a preface to one of our ancient volumes, putting some of the last sentences first, and some of the first sentences last; and one of us—for you know we are dual—suggested the proceeding, but the other gravely shook his head. The suggester rejoined, "There's nothing new to say, you know." Still the grave one shook his head. "Instead of shaking your head," retorted the suggester, "shake something out of it that will do for a preface: I've tried without success." This reply was elicited: "A gentleman proposed marriage to a damsel; her father wrote a refusal, but in the damsel's handwriting on the envelope was written 'STRIPES.' Let us take the advice contained in that word."

We did so, and we will do so to the end of our career. That word transposed is "PERSIST." We have persisted, and have almost written already enough for an address to you—"our Readers." We will persist in the course we have hitherto succeeded in pursuing, and that will enable us to persist in pleasing you. We will persist in the endeavour to establish truth in all that appertains to our various departments. We will persist in linking our arms through the arms of old contributors, and in holding out the hand of welcome to new ones. We will persist in gratefully accepting information, and in courteously imparting that which we possess.

INDEX.

AMSTERDAM POULTRY SHOW, 58
Ayrington Poultry Show, 284
Achimenes—watering, 243; select, 174
Agaveus fimeatarius, 396
Air-giving, 156, 459
Allamandas—Schottii, 117; starting, 191
Alloplectus capitatus culture, 340
Amaryllis—culture, 277; Prince Teck, 296
Amateurs, hints for, 21
American plants—managing, 394; Waterer & Godfrey's, 408; at Regent's Park, 408
Ammoniacal liquor, vaporising with, 366; for Vines, 427
Andalusian fowl's merits, 231
Anemones—management of seedling, 316; single, 371
Annals—sowing half-hardy, 299; to bloom in October, 412
Anthrium Scherzerianum culture, 356
Ants—in a greenhouse, 157, 345; on a lawn, 229; banishing, 284; destroying, 327
Apeliandra Porteana culture, 381
Aphides—destroying, 355; on fruit trees, 386
**Apples—for espaliers, 33; trees mossy, maggots in, 80; training, 157; grafting, 262; for a trellis, 191; shoots diseased, 244; late kitchen, 301; Reinette, 460; budding, 460
**Apricots—on walls, 281; ripening of orchard house, 453
April, plants flowered in, 342
Aquarium, fish failing in, 122
Aquatic plants for ponds, 54
Araucaria—Cunninghamii siuensis, 91, 156; imbricata, 243
Arbutus propagation, 244
Arcade, evergreen for, 109
Aristolochia ringens, 296
Arnott's stove, 133, 157; experience with, 27; for heating, 91
Arums, removing flower stems, 348
Asparagus—culture, 22, 45; French, 280; beds, salting, 174; from seed, 229; planting, 244; in damp soil, 263; planting and manuring, 361
Asphalted root, water from, 32
Asphalt garden walks, 300
Ataccia cristata, 342
Aucuba japonica, 181, 199; berries, gathering and sowing, 229; sowing, 298; propagation, 257; grafting male on female, 316; berries, 360
Auriculas—why are they neglected? 235; culture and list, 290; Colonel Champeys, 342; season for showing, 361; potting early, 390; potting, 456; sowing, 446
Azaleas—shoots, stopping, 101; varying, 191; over-potted, 283; culture, 414
BAG-HOLDER AND TUNNEL COMBINED, 274
Bait, poisoned, 226
Balsams to flower in August, 331
Bamboo planting, 283
Banksia and Grexvillea cuttings, 380
Banant culture, 396
Banalore Horticultural Fête, 257
**Bantams—varieties of Black, 88; plumage of Game, 106; dubbing Game, 122; weak-legged, 268; chickens, 416; carbones of Black Red, 166
Barbie de Capcon, 380
Barndoor fowls, 246
Barbore plants for in a greenhouse, 118; for suspended, 229
Bath and West of England Society, 119; Poultry Show, 412******

Beans, sowing, 134
**Bedding plants, 379; that winter in a cold pit, 5; in a pit, 80, 118; yellow, 106; hardening-off, 260, 263; for early and late planting out, 336, 357
Bedington Poultry Show, 430
Beck-keeping, Frothdale, 329
**Bees—foul brood; Ligurian queen raising, 19; doings in a small apiary in 1867, 38, 63; honey harvest of 1867, cheap hives, Ligurians, 64; utilising and uniting condemned, 87; bars for supers, gratings to exclude drones, nucleus hives, combs beyond bars, 88; utilising and uniting condemned, 105; decreasing; hives, changing floor-boards, cork for, 106; utilising and uniting condemned, 121; feeding, dead ejected, bar-frame hive, 122; an American apiary, 145; flower for, 146; saving condemned, feeding, 146; uniting condemned, food for, management, 162; improved cottage hive for, strange phenomenon in, price of Ligurian and of frame hives, 178; artificial swarming in common hives, 179; flowers for, 180; adding Ligurian queens, 195; who introduced Ligurians successfully, 196; effects of foul brood, 196; house, removing, excrement of, hives, driving, 196; utilising condemned, 215; distance of flight, artificial swarming in common hives, transferring, forming an artificial swarm, 216; consequences of mismanagement, 231; neglecting food, pruning combs, forming artificial swarm in unicorn hive, 232; Ligurian queen's wing torn, 250; early drones, 251; hive covers, 252; consequences of mismanagement, shifting into a new hive, 267; comb-construction in Woodbury hives, hives, aspect for bee house, Ligurianising, hives containing empty combs, 268; artificial swarming, feeding, falling, 288; Egyptian in America, 394; Abyssinian, 395; hives, diving, feeding, 396; painting straw hives, utilising and uniting condemned, 397; early swarms, 320; varieties in Ceylon, super left on a hive, hives turpentine, Buckwheat as a bee flower, 384; unjust slaughter, 352; how to breed pure queens, procuring artificial swarming, frame hives, 359; early drones, 354; effects of chill on undeveloped brood, management of, 369; breeding Ligurians, Kochler's discovery, temporary support of combs, adding queens, American collateral plan, 387; queen's fecundity, culture to supers, 399; strong v. weak swarms, 415; feeding confined, 416; capping a hive, 416; strong versus weak swarms, raising queens, 431; removing hive to bee house, 432; hive, 449; driving, weak v. oak, feeding confined, 450; artificial swarming in common hives, German centrifugal hive-extracting machine, 465; improved wax-melting apparatus, not swarming, 466
Bee Red, varieties of, 136; as a flower-garden plant, as a desert ornament, 369; as a bedding plant, 365
**Begonias—Veitchii and rosa-flora, 71; fine-foliated, 80; glandulifera, 239; falcifolia, 342; Sutherlandii, 170
Belladonna Lilies, 255
Blepharidopsis corallina culture, 445
Berry Hill, 26
Bignonia jasminoides not flowering, 54
Bird's-nest Fern blackened, 381******

Birds v. fruit buds, 111
Birmingham Poultry Show, 332
Bizchia sapida culture, 229
**Boilers, 224, 271, 395; setting a saddle-back, 100; Marriott's, 127; portable, 282; for stoves, 308
Bone dust for lawn, 191
**Bonnie—dissolving, 11; by potash, 73
Books for a young gardener, 117
Box-er flowers, neglected, 341
**Borecole—Melville's Improved Variegated, 167; as a dessert ornament, 360
Botanical specimens, drying, 78
**Botanic (Royal) Society's Shows, 330, 401, 430
Bottom heat, hot water for, 245
Bougainvillea glabra, flowering of, 380; spectabilis, 117
Bouquets, to make skeleton, 456
**Box—propagation, 101; edging, clipping, 392
**Brahm Pootras—separate prizes for, 16, 102; Light and Dark, 82, 120, 143, 158, 175, 245; plumage of dark cock, confined, 88; plumage of Dark, 106; points, 180; versus Hamburgs, 113; merits of, 141; classes, 193; management, 194; bearing down in, 196; Light, 212; combs, 216; cross with Dorkings, 246; breeding Dark, 252; and Dorkings, 264; web-footed, 268; chickens' wings twisted, 288; chickens, growth of, 384; Light v. Dark, 398; prizes, 462
Breaking-up common land, 283
Brussels, crooked, 88
British Flowering plants, 453
**Broccoli—not true, 95; late, 388; large, 408
Broom, cutting-in, 428
Brussels sprouts culture, 89
**Buckwheat—sowing, 192; for poultry, 232, 284, 303, 352, 416
Buckwheat's stamens, style for, 365
Bulbs after flowering, 265
**Bullfinches—breeding, 136; materials for nest, 252; coughing, 116
Rush training, 198
**Butter—sending by rail, 146; becoming rank, 384
CAULI INFESTED BY SCALE, 245; pruning, 301; not flowering, 428
Calabar Bean, 282
Caladiums—potting, 141; culture, 253
Calanthe vestita culture, 395
Calceolarias, herbaceous, cuttings, 101; failing, 349
Caledonian (Royal) Horticultural Society's shows, 170
Callistemon lanceolatus propagating, 262
Cambridge Poultry Show, 159
**Camellias—select, 33; bloom buds falling, leaves sticky, 54; culture, 141, 291, 276; aphides on, 290; training, 348; Madame Ambrose Verschaffelt, 423; in pots and borders, 441; house for, 115; not flowering, 460
Canada, notes in, 8
**Canaries, 63, 150; lice in cage, 88; with lark, detecting sex, 105; nest-mate and laid, 116; stamping, bleeding, 122; breeding, a guide to, 135, 231, 266, 297, 333, 398, 399; Lizard, 281, 249; singing, 232; Goldfinch Mules, 267; Lizard, are hybrids fruitful? 319; hen while sitting, 334; eating their eggs, 400; breeding Norwich, 430; long-clawed, 116
Canary Club project, 86
**Canker in fruit trees, 118, 383
Cannas, culture, for small garden, 118
Cantua boxifolia culture, 316
Canvas protection for wall trees, 229**************************

Caponising, 409
Carboic acid, 376, 437
Carrots, boiled for fowls, 156
Carter & Co.'s Nursery, 74
**Caterpillars on bedding plants, 91, 124, 167, 294; on Pelargoniums, 149, 158
Cattleya am-thyroglossa, 71
Cauliflower culture, 238
Cautions to purchasers, 350
Cedrus, the genus, 102
Celeriac culture, 330
Celery, Henderson's Conqueror, 94
Celosias to flower in August, 330
**Centaurea—candidissima from seed, 117; culture, 164, 267; propagation, 137, 219; its merits and defects, 254; propagation and failure, 292; ragusina propagation, 118
**Cerastium tomentosum—edging, 15; cuttings, 262
Chamaecyparis humilis, transplanting, 210
**Charcoal—ashes for manure, 55; for composts, 174
Chatsworth, new gardener at, 296
**Cherries—trees decaying, 263; caterpillars on, 316; ripening of orchard house, 453; falling, 461
Chickenhood, 363
**Chickens—fattening, 162; marking, 216, 320; spring, 232; payment for rearing, 257; checking growth of, 288; rearing spring, 318; rearing, 349; promoting growth of, deformed, 354; dying in the shells, 396; weak-footed, 490; malformed, 493; fattening spring, 384; dying, 416
Christmas Rose planting, 261
**Chrysanthemums—propagating, 80; to a greenhouse, 118
**Churchyard—shrubs, 15; planting, 130
Cider as a test of Apples, 325
**Cinerarias—losing flower stems, 33; flowers petalless, 80; culture, 141; potting, 174
Clarke, Major T., medal to, 126
Ceanothus Dampieri, duration of, 380
**Clay, burning, 141
**Clematises—for training on trees, 80; pruning, 428
Clerodendron Thomsomii, 117
Clianthus Dampieri training, 161
**Climbers—pruning, 31; for stove, 33; for north aspect, 243; for greenhouse and conservatory pillars, 283; in-door, 463; for eastern aspect, 428
Cloche, the, 167
**Cloberry, 401
Coal, economy in, 116
Coburgia trichroma, 71
Coccoloba platyclada for table decoration, 104
**Cochin-Chinas—judging, 81; scurfy legged, 122; huckle of Cinnamon hen, 180; legs, scurf on, hooks of, 216; cock's head swollen, 252, 288; meat for, 252; colour of eggs, 268; chickens dying in the shell, 320
Cockards and pullets, separating, 396
Cochlostoma Jacobianum, 312
Cockscom culture, 237
**Cocks fighting, not growing, 416
Cologne cristata culture, 210
Cola acuminata, 239
**"Coleoptera Hesperiidae," 238
**Colusae, sale of, 237, 312
Colinsia verna, 371
**Colocasia esculenta, motions, 337
**Combs—fallen, 146; cause and cure of, 162
Combrum purpureum pruning, 158
**Comfrey, 54
Composts, injudicious complicated, 136
Conifers at Mr. Mitchell's, 99**

- Conifers—soils and situations for, 124; on a clay soil, 126; hardness of, 164; select, 300
- Conservatory erecting a small, chambers for, 244; chambers and other plants, 55, 42
- Copings—boards for, 118; for walls, 154; tile, 203
- Cordon? What is it, 4, 43, 68; training, 71, 95, 198, 107, 153; straining wires of, 153
- Cork Poultry Show, 59
- Correa culture, 228
- Corynocarpus laevigatus, 23
- "Cottage Gardening," 239
- Cotton—hybridisation and culture, 123; culture, 117
- Cotyledon velutina, 71
- Covant Garden Market, 14, 32, 54, 78, 93, 117, 149, 156, 173, 190, 200, 227, 242, 261, 281, 299, 326, 329, 347, 365, 379, 394, 412, 427, 444, 460
- Cows—Kerry, 292; oilcake for, 216
- Cracking of fruit, preventing, 110
- Cree-Creeps, 252; sickle feathers broken, 300; described, 161
- Crickets—destroying, 78, 158, 203; in fernery, 330
- Crinum capense culture, 101
- Crocker, death of C. W., 206
- Crocuses—eaten by mice, 323; taking up, 412
- Crop, swollen, 136
- Cropping kitchen garden, 459
- Croquet ground, moss and plantain on, 158
- Cross-impregnation, effect on seed, 129
- Croton maximum, 296
- Crystal Palace, 347; Bird Show, 160; Flower Show, 388; Rose Show, 422, 454
- Cucumbers—and Melons, house for, 79; frames, painting, 102; moving plants, 115; ridge, 191; early, 172; forcing, 193; in flued pit, produce of, 200; bed making, 305; Dales, Cucumber, 243; without artificial heat, 244; heating a house small, 262; not setting, 330; culture, 393; in winter, 318; devoured by rats, 364; woodlice attacking, 365; litter, 365; growing in boxes, 365; leaves damping, 428; producing at Christmas, 460
- Capressus macrocarpa, 66, 140; and other Comifers, 6, 133
- Carriers, training Red, 428
- Carriers' refuse as a manure, 201
- Castard Apple, culture, 366
- Caulish's spring fowls, 237
- Cutting—and seedling management, 196; planting, 227; striking, 228; over a tube, 233
- Cycas Revoluta, soil, 15
- Cyclanthes—potting, 33; after flowering, 243; varieties of Persiam, 342; atitumum culture, 87; ripandum, culture, 365
- Cymbidium pendulum, var. atropurpurea, 423
- Cypresses, straggling, 33
- Cytisus Adam, 428
- DACTYLIS GLOMERATA VARIEGATA, 372
- Dahlia—select, 142; as a bedder, storing tubers, 295; imperialis, 273
- Daisies, culture, 240; double, 341
- Dalchampia Roehiana rosea culture, 1
- Damson trees, removing, 79
- Daphne indica rubra not flowering, 283
- Darlington Gardeners' Association, 261
- Days, hottest period of, 254
- Deciduous shrubs, list of, 86
- Dendroica—cumulata, 286; nobile, leaves brown, 395
- Dessert, plants for ornamenting, 360
- Dew, cause of on Vines, 244
- Dicrananthus phylla, 239
- Dickson, Mr. J. H., 52
- Dipladenia amara, 296
- Dosa grandiflora culture, 218
- Dorons—coloured, 58; weight and colour, 106; head and comb turning black, colour of eggs, 181; with inflated abdomen, 195; and Bacteria footers, 240; their merits, 301; Lady Dorking's trouble, 206; puny, 320; White, death among Grey, 400
- Doves—young ejected from the nest, 242; diving, 450
- Dracopis—also notes on, 253; propagating, 92
- Dragon Tree of Tenerife, 32
- Dragon's wood for, 100
- Drumming land Pt. theory, 78; an orchard and clay land, 99
- Dundee Poultry Show, 176
- Ducks—from Isle of Fern, 56; keepers, 88; Ashbury with Wild, 106; classes for, 13; wounded wild, 126; prizes for, 23; Black East Indian, 252; breeding, 268; eggs not hatch in, food for, 288; eggs infertile, making, 320; eggs fertile though no water, excessive in, 330; points of anatomy, 351; laying 111; culture, 450; age of Roule for breeding, 416
- Dumfries and Maxwelltown Ornithological Society's Show, 37, 61
- Eaton, Mr. J. M., 285
- Edgings—slate, 321; Sedums for, 452
- Eggs—for sitting, 64; marble nest, 106; selling, 146; packing, 146, 162, 265, 302, 332, 384, 413, 448, 462; distinguishing sex in, 180; double-yolked, keeping, 196; yolks, of pullets, for hatching, 259; selling boiled, 258, 350; with thickened skins, misshapen, 288; not hatching, 302, 306; pullet laying soft, 306; hens eating, 320; chilled, 351; protracted hatching, preserving, 354; excess of, 364; hens laying soft, 384; broken in the hen, 416; moistening up on hatching, 432
- Emigrants, warning to, 201, 482
- Emigration, 239, 277; of gardeners to America, 150
- Entomological Society's Meeting, 112, 238, 255, 301
- Euphrasia—striking cuttings, 101; treatment after flowering, 366
- Epidendrum ibacense, 423
- Epidendrum, 341
- Epworth Poultry Show, 383
- Eranthemum aspersum, 423
- Erythronium giganteum, 423
- Essex Poultry Show, 37, 61
- Eucharis amazonica to flower in August, 330
- Eucodopsis nageloides, 396
- Evergreens—list of, 80; in houses, 22; for pyramids, 100
- Exhibitions, horticultural in 1868, 557
- FASCINATION, 461
- Favorites, old, 293
- Fernery—growing plants in, 174; liquid manure for, 191; plants for wall of, 348
- Ferns—pithierous, 7; culture in stores, 79; propagating prolificous, 192; repotting, vaporising, 282; over-potted, compost for, propagating by spores, 283; mildew, 444
- "Ferns and Lycopods, Select," 423
- Pevelev, Golden, for bedding, 395
- Fife and Kinross Poultry Show, 59
- Fish—(also, 283; trees in a peachery, 200; cutting their fruit, 300)
- Fir, sowing Scotch, 191
- Fleas—in hen house, 88; driving away, 268
- Floors Castle, 113
- Flower-garden—plan, 544; planting, 54
- Flower gardens, attractions in small, 65
- Flower pots—paper envelopes, 229; where to be had? 255; forms of, 361
- "Flower Garden, Handy Book," 294
- Flowers of other days, 199, 258; lovely though common, 282; too much neglected, 278; drying, 316; spring, at Mr. W. Paul's, 358
- Foliaged (fine) stove plants, 101
- Forget-me-not for spring blooming, 412
- Fowls—birds, caution to, 194
- Fowls—soft food for, weighing with head downwards, 84; for a clay soil, 119; with ulcerated livers, not laying, 180; dying suddenly, 216; marking ulcerated intestines over fat, 222; chilled, pecking each other, 354; rice as food for, 369; dying without apparent cause, 375; removing mounting food required by, eating feathers, 432
- Frames—utilising, 15; lining, 157; propagating, 192
- France and Italy, notes from, 45
- Fraserley Poultry Show, 382
- "French Gardens, Gleanings from," 404
- Fruit—growing far north, 48, 149; trees underpotted, 192; in pots, thinning fruit of, 171; for north wall, 191; protecting pyramid, 193; thinning blossoms, 243; bush, 234, 291; on open walls, at the Mount, 297; removing protection from, 368; removing in winter, 280; lichens on, 433
- Fuchsias—wintered in a cellar, 147; growing for exhibition, 191; repotting, shoots diseased, 317
- Fumigating to destroy insects, 31, 353, 296
- Furnace for fire-heating, 100
- Furze for cover, 242
- GALVANISED WIRE TRELLISES, 91, 151, 165, 204
- Game coverts, shrubs for, 47
- Game fowls, 317, 321, 350, 367, 381; wing of Brown Red cock, 61; prize sorts and their colours, 81, 177; tails, 82, 142, 239; classes for, 264; plumage of Indian, 288; padding, 302; diseased, 370; breeding, 347; cock's spur broken, 416; in former years, 429, 462; Gapes, treatment, 100
- Garden, a chat about my, 222
- Garden's, our, 254
- Gardeners' Benevolent Institution, anniversary, 279
- "Gardener's Almanack, Poultry-Keeper's and Apiarian's Calendar," 44
- "Gardener's Year Book," 73
- Gases—time for manure, 54, 118; heating by, 73; Shrewsbury apparatus, 93
- Gases, plants inhaling noxious, 275, 308
- Geese—green, 55; management of, 180, 264; hatching, 222; numbers bred in, 264; hatching, 264; not laying, 306; weakness of, 423
- Geonoma magnifica flowering, 174
- Geranium and Pelargonium defined, 460
- Gesneras—for winter blooming, 183; cinabarina not flowering, 117; culture, 149; exoniensis, 295
- Ghent International Horticultural Exhibition, 171, 256, 273
- Ginger culture, 317
- Glaboulous—and its culture, 4, 39, 147; bulbs keeping, 15; diseases, 39; on north aspect, 54; for decoration, 147; list of, 164; notes on, 423
- Glasgow Agricultural Society's Show, 464
- Glass—in brick walls, 67; structures for fruit and flowers, 254; for fruit-growing, 237; corrugated, 245; colouring, 444; rendering opaque, 461
- Gloxinias—select, 171; watering, 213
- Gnaphalium lanatum cuttings, 262
- Goldfinch, teaching to sing, 450
- Gooseberry—bush cuttings, 7, 184, 191; lime-washing bushes, 54; liquid manure for, 191
- Gorse for cover, 242
- Graft, cutting of stock above, 413
- Grafting wax, 54
- Grapes—crossing early hardy, 2; setting; air to be moist or dry? 242; Fronticiana, 71; to set the Muscat of Alexandria, 92; Royal Ascot, 94, 148; atmosphere for setting Muscat, 181; setting of Muscat, 153, 203; Black Hamburghs at Christmas, 192; rust on, 301; keeping, succession of, shrivelling whilst young, 330; spotted, 349, 365, 380; preventing dampness on, 372; remaining on the Vine, 380; fertilising shy-setting, 423; spot on, 457; cracking, Chasselas Napoléon, mildew on, 444
- Grass—sowing seeds, 223; cutting, 263
- Gravel on walks not setting, 381
- Green fly—on fruit trees in bloom, 278, 281; destroying, 355
- Greenhouse—heating and arranging, 100; plants to flower in June, 157; ventilating, 24; removing, heating, and painting, 192; eastern in, 300
- Grubs, destroying, 395
- Guano, applying to lawns, 366
- Guinea fowls, detecting sex, 284
- Gutters and spouts, 53
- Gymnostachyum Verschaffelti culture, 24
- HALFAN POULTRY SHOW, 159
- Hampshire—P. Brahmas, 148; preventing tying, 145; eggs of golden-spangled unfertile, 268; chickens, Golden-spangled, 416
- Hand-lights, wooden framed, 258
- Hanley Poultry Show, 56
- Hants and Berks Poultry Show, 445
- Harts, list of certain shrubs, 283
- Hartshorn, 325
- Hatching—the seasons, 318, 332, 396, 429; treatment of hen, 396; results, 465
- Hawk, life of a tame, 249
- Hav's stove, charcoal for, 70
- Heaths, twelve select, 399
- Heating, 100; from a propagating tank, 79; with hot water, 218, 444
- Heddonwide Poultry Show, 17
- Hedgehogs and black beetles, 18
- Hedges—and shrubs for them, 217, 236; plants for, 235
- Hens—picking cock's comb, 106; cock's sootum with, 196; laying, food for, 216; laying in winter, 230; ceasing to lay, 268; broody, 384; for laying only, 450
- Herbaceous plants—for cold locality, 242; from seed, 300
- Hewitt, Mr., testimonial to, 193; its presentation, 367
- Hibiscus marmoratus, 296
- Hollies—not producing berries, 243; grafting, 282
- Honeysuckle, 411
- Honeysuckle—Variegated Japanese, flowering, 219; blight on, 316
- Horticultural structures, patent improvements, 7
- Horticultural (Royal) Society's scheme for 1868, 40, 68; Committee and Meetings, 69, 152, 185, 221, 271, 319, 338, 373, 437; changes in Council, 70; Exhibitions, 110, 127; examinations, 112, 117, 126; ballot for plants, 114; Bateman challenge cup, 115; Leicester Show, 95, 126, 157; "Journal of Horticulture," prizes at, 234; Council Meeting and Report of Council and Cliswick Board, 124; gardens, 150, 187; new Scientific Committee, 185, 221, 312; trial of flowers and vegetables by Committee, 203; First Spring Show, 220; instruction to young gardeners, 223; drawing class, sale of Coleuses, 279, 312; Second Spring Show, 309; florists' flowers at, 324; Third Spring Show, 339; meeting of exhibitors, 374; Summer Show, 405; judgment at, 419, 436; Special Prize and Pelargonium Show, 437
- Hotbeds—managing, 12; over a flue, 157; for propagation, 116; for forwarding flowers and vegetables, 173; of dung, 328
- Hot-water pipes, distance of plants from, 119; length needed, 141
- Houdays, 123; four-footed, 82, 102, 144, 151, 194; points in, 146; fifth toe, 176; their characteristics, 264; markings of, 254; chickens, 416
- Hull and East Riding Poultry Show, 365, 383, 432
- Hull Botanical Garden, 424
- Hurdles, painting, 210
- Hyacinths—compost for, 141; after flowering, 282
- Hybridising at the Chiswick Garden, 541
- Hypericum patulum, 170
- Hypoxis elata, 170
- ICE NOT KEEPING, 141
- Ichneumon robiginosus, hardy, 380
- Incurators—temperature, 146, 396; advantages of, 369
- Inflammation in fowls, 146
- Influence of male bird, 196
- Ingram, Mr., 30
- Insects attacking plants, 355
- Ipomoea heterophylla for a parlour tree, 216
- Ipsed speciosa, 296
- Ivies—planting, 79; pruning, 101; select variegated, 380
- Ixias, dividing, 348
- Ixora culture, 366
- JANUARY, PLANTS IN FLOWER DURING, 136
- Jedburgh Poultry Show, 104
- Jersey, Horticultural report of the Island, 92
- Jersalen Artichokes for fowls, 820
- Jesse, death of Mr. E., 279
- Jungle fowl, 196
- KALES, VARIOUS, 328
- Kendal Poultry Show, 84
- Kidney Beans—culture, 153; forcing Dwarf, 290; culture of dwarf, 290; sowing, 346
- Kochler's discovery, 384
- LABRUMS—PRUNING, 395; with yellow-coloured flowers, 445
- Lanchester Poultry Show, 37
- Lapageria rosea—culture, 90, 229
- Watering, 258; and splendens, 125
- Lark with emaries, 106
- Latania borbonica, soil, 15
- Laurels—New Zealand, 33; pruning, 348; hardness of common, the Polychian, 117, 453; striking cuttings, 428
- Laurustinus transplanting, 124
- Lawn mowers, sharpening, 232
- Lawns—weeds on, 244; mossy and coarse, 390; applying guano to, 365; management, 427; mossy, 460
- Laying, Indian mode, 345
- Leaves—collecting, 12; forming buds, 282; skeletonising, 403
- Leeds Gardeners' Friendly Society, 95
- Lee, Mr. J. N., 425
- Leicester Horticultural Show, "Journal of Horticulture," prizes, 330
- Leighton Buzzard Poultry Show, 25, 60
- Leschenaultia culture, 281
- Lettuce, sowing for winter and spring, 427; producing at Christmas, 460
- Lice on fowls, 88
- Lichens—on forest trees, 183; on fruit trees, 433, 456
- Liliums—and their culture, 181; manure water for, 300; auratum, 101; producing small bulbs, 23; price of, 210; Brown, 101; giganteum culture, 80; monadelphum superbum, 51; species of, 11; speciosum varieties, 123; Thunbergianum parvum, 423
- Liloes, Guernsey, &c., not flowering, 210
- Lily of the Valley planting, 142; preparing for forcing, 233; forcing, 322; remarks on, 322
- Lime—for fowls, 162; sulphate of as a manure, 279
- Lime rubbish, 174
- Lindley Library, 424, 441
- Liquid manures, 443; smell from, 238
- LOBELIAS—from seed, 54; propagating, 141; species of, 11; decorative plant, 238; erinus speciosa, 231
- Love Birds, 146

- Tea culture, in India, 46
 Temple Gardens, 288
 Thompson's styptic for cuttings, 316;
 for budding, 365
 Tussocks, creating, 469
 Tuxton Poultry Show, 461
 Utripes, 498; destroying, 118
 Urtica dioica, 239
 Urtica grandiflora culture, 330
 Tobacco fumigation, 228, 256; liquor
 for insects, 292
 Tomatoes, compost for, 80
 Tools, grind the, 425
 Veronica pulcherrima culture, 153
 Urtica grandis, 381
 Town garden—shrubs, &c., for, 102;
 perennials for, 229
 Transatlantic pottings, 16
 Transplanting large trees, 292
 Trees of Old England, 294
 Trees, removing large, 292, 293; single,
 in exposed places, 289; and flowers
 as friends, 323; removing but ever-
 green, 428
 Trellises—of galvanised wire, 112, 127;
 on a wall, 188; fixing to a wall, 241;
 wooden, 228; of wire for stone wall,
 292
 Trichocentrum albo-purpureum, 179
 Trimming fowls for exhibition, 212
 Tritcheia unicolor culture, 209; dor-
 midant, 258
 Tropaeolum— from seed, 54; Jacaratti
 cut flowering, 216; Mrs. Trevel-
 lock's, producing flowering, 348
 The death of Mr. E., 225, 262
 Tuber wood, 156; tree bleeding,
 180
 Tulip—uses as a signature, 161; soil, 192
 Turnip—stealing, 78; fly, check to,
 239
 Turnips, raising, 551
 UVECTION POULTRY SHOW, 36, 60
 VALIOTA PERFURA, POTTING, 33
 Vegetable Marrow culture, 368
 Verbenas—seeded, 112, 228; cuttings,
 striking, 283; Perry's seedling, 292;
 varieties and prizes for, 361; on poor
 soil, 413
 Veronica Calvoana, 239
 Veronica Anderson variegata for bed-
 ding, 316
 Vitis major elegantissima, arrange-
 ment and culture, 163
 Viney—planting an early and late,
 100; plants for wall, 118; border in,
 119; border, 141; ground, construct-
 ing, 339; watering, &c., in ground,
 348; staking, 363; management,
 411
 Vines—growing and natural tempera-
 tures, 31; borders, covering with
 glass, 15; bleeding, 14; grafting, 25;
 in an intermediate house, manage-
 ment in a small viney, for a cold
 pit, 32; locally bug on, roots decay-
 ed, 33; grafting and marching, 47;
 American as stocks, 65; in a Fern
 case, 54; for forcing, 78; Lady
 Down's, 79; with Cucumbers, 79;
 time for starting, 93; border for
 Muscat, list of late, fruiting, plumb-
 ing potted, for small viney, in pots,
 100; management, grafting, 102;
 fairly good for borders, 78; potted
 in ground viney, for greenhouse,
 in a Fern case, 119; in pots, for or-
 chard house, pruning, 111; effects
 of layering, 130; for early forcing,
 156; eyes falling, in pots, fruiting
 young, 157; for ground viney and
 cylinder, 161; grafting, 191; late, for
 greenhouse, 135; air-roots on, 198;
 VINES—Continued.
 planting, roots too deep, Royal
 Ascot, 209; Lady Down's, 323; mil-
 dewed, Muscats and Hamburghs
 together, red spider on soil of pots,
 eaten by rats, 262; stopping laterals,
 263; bleeding, 284; milled, bleed-
 ing, 300; planting, 301; uncovering
 border, 330; raising from seed,
 337; leaves turning brown, 348; thin-
 ning the crop, 355; duration of a
 branch's productivity, leaves
 browned and holed blossoms in-
 jured, 427; cutting on an old root,
 428; leaves diseased culture, 441;
 leaves wasted, blossoms scorched,
 461
 Vitis cornuta, 29; in winter, 15; from
 seed, 118, 282; propagating, 122; not
 flowering, 229; varieties of, 423, 453;
 and its failure in dry seasons, 457
 Viola lutea, from seed, 118, 264; pro-
 pagating, 122
 Violets—planting, 112; the family of,
 161
 Vitis platanalis, 71
 WALKS, GREEN VALLEY FOR DESTROY-
 ING WEEDS ON, 366
 Wallflower, striking cuttings of double,
 379
 Wall fruit trees, insects on, 117
 Walls, kitchen garden, 9, 43
 Ward, N.B., 41
 Wasp, early queen, 196
 "Wasps, British Social," 205
 Watering, 365, 426, 442; with water
 from an asphalted roof, 32; in green-
 houses, 414
 Water—woods removing, 210; keeping
 clear, 262; and watering, 442; tepid,
 445
 Waverley Poultry Show, 177
 Weeds, destroying, 126
 Week, work for, 11, 30, 52, 55, 95, 111,
 137, 154, 171, 188, 207, 225, 240, 253, 278,
 297, 311, 327, 345, 362, 377, 392, 409, 425,
 441, 457; days of last, 12, 31, 53, 75,
 98, 115, 138, 155, 172, 189, 207, 226, 241,
 260, 289, 298, 311, 328, 346, 363, 378, 392,
 410, 426, 442, 458
 Wells, American, 170
 Wentworth Poultry Show, 34
 Westonsuper-Mare Poultry Show, 33
 Wharfedale Poultry Show, 318
 Wheat, dressing with arsenic, 171
 White Fly, 141
 Whitehaven Poultry Show, 57
 Whitehorn, propagating, 380
 Whitewash, 228
 Wikandia craccasiensis seedlings, 283
 Wild plants on roof of a London res-
 idence, 421
 Window—plants for a north, 157; gar-
 dening, 173; boxes, raising plants
 from seed in, 174; gardening, 300
 Winter and spring decorative plants,
 21, 22
 Wire netting for protection, 54; for
 protecting glass roof, 174
 Wireworms, 295; in cucumber com-
 post, 229; destroying, 403
 Wistaria sinensis on north aspect, 387
 Wollaton Hall, 375
 Woodcocks, feeding, 354
 Woodlice—destroying, 330, 365; in Cu-
 cumber bed, 365; in hothed, 411
 Wooland House, 39
 YEAR, THE LAST, 51
 Yew tree, old, 271
 Yuccas and their propagation, 44
 ZINC LAMBS, 120

WOODCUTS.

	PAGE.		PAGE.
American wells.....	170	Pear, Ah! Mon Dieu	134
Arnett's stove modified	28	„ Alexandre Bivort	11
Bag-holder and tunnel	278	„ Alexandre Lambre	11
Bee-glass.....	415	„ Althorp Crassane	29
Beehive, Improved Cottage.....	178	„ Amadotte	29
Bee, fixing combs	320	„ Amande d'Élé	29
Beller, the Pocket	224	„ Amandine de Rouen.....	155
„ simple form of	225	„ Ambrosia	226
Cordon Training	72, 73, 96, 97, 154	„ Andie Le Clerc	226
Flora Castle Plant and Fruit Houses	114	Pelargonium reticulatum	377
Flower-garden Plans.....	163, 224, 244	Ribbon border	224
Flower pots	362	Rose-budding in June.....	201
Hand Lights, wooden-framed	238	Silkworm stages	87
Honey-extracting machine, German centrifugal.....	465	Transplanting Sledge and Machine	202
Hull Botanical Garden raised beds	424	Trellis, fixing on a wall	188
Layering, Indian mode of	313	Wall-copings	51, 154
Pea supports	244	Walls, hollow	51
Pear, Achau	10	„ proportion of sun on.....	10
„ Adam.....	10	„ various modes of building	51
„ Adèle de St. Denis	134	Wires, straining for Cordon Trees.....	151
„ Adèle Lancelot	134		

WEEKLY CALENDAR.

Day of Month	Day of Week	JANUARY 2-8, 1868.	Average Temperature near London.			Rain in last 40 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.		Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.		m.	s.	
2	TH	Day breaks 6.3 A.M.	42.5	29.7	35.1	17	9	48	0	41	37	41	1	12	8	4	12	2
3	F		43.4	30.8	37.2	19	8	8	1	4					9	4	40	3
4	S	Royal Horticultural Society, Promenade.	42.7	31.6	37.1	17	8	8	2	4	28	0	7	41	10	5	8	4
5	SUN	2 SUNDAY AFTER CHRISTMAS.	41.9	27.5	34.7	15	8	8	3	4	55	0	20	2	11	5	35	5
6	M	EPHRAIM. Twelfth Day.	41.1	28.0	34.5	14	8	8	4	4	31	1	32	3	12	6	2	6
7	TU	Twilight ends 6.11 P.M.	41.0	24.0	34.5	16	7	8	5	4	14	2	47	4	13	6	28	7
8	W	Meeting of the Geological Society.	40.9	30.0	35.4	13	7	8	7	4	7	3	58	5	14	6	51	8

From observations taken near London during the last forty-one years, the average day temperature of the week is 41.9°; and its night temperature 29.4°. The greatest heat was 57°, on the 3rd, 1863; and the lowest cold 11° below zero, on the 4th, 1867. The greatest fall of rain was 0.86 inch.

DALECHAMPIA ROEZIIANA ROSEA.



THIS most beautiful and useful Mexican Dalechampia is certainly one of the most elegant plants that have appeared for many a year, and will be found a most welcome addition to our stock of those suitable for table decoration. It is also invaluable for the conservatory. The plant grows very freely, and is at all seasons covered with its pretty pink bracts, embracing in the centre the yellow flowers.

The flower and bracts are very much like those of the Bougainvillea, but are produced singly instead of in clusters. The flower is also much brighter in colour, and the habit of the plant is very graceful. No plant that I have seen can compare with this in respect both to leafage and richness of floral colouring. It has bright, glossy, green, sub-cordate leaves, about 8 inches long. The plant is very easily managed, and may be grown into a large specimen for conservatory decoration; when grown in 3 or 5-inch pots it is also most useful for decorating vases or flower baskets in the drawing-room.

One great advantage which this Dalechampia possesses over many other flowers is, that its flowers continue in great beauty for a long time; in a moderately dry temperature of 55° the flowers retain their freshness and beauty for three or four weeks. It will be a valuable addition to collections of stove and greenhouse plants, and will, doubtless, be made the most of for this purpose by the successful exhibitors of this class of plants; for graceful specimens may be easily grown without the aid of so many sticks and distortions as one usually sees at exhibitions. It will, therefore, present a very different appearance from many plants exhibited in stove and greenhouse collections. Its bright leaves, beautiful bracts, and yellow flowers will add much grace and beauty to future exhibitions.

Where the object is to form the plant into a large specimen, either for exhibition or other purposes, it should be placed in a rather high and moist temperature of 70° or 80°. Every flower bud must be picked out as soon as it appears on the stem.

The soil most suitable is a mixture of rich, fibry, yellow loam, peat, leaf soil, and cocoa-nut refuse in equal portions, with a little small charcoal, and just enough silver sand mixed with it to keep it sufficiently porous. The drainage must also be perfect.

As soon as the roots have reached the sides of the pot the plant may be shifted into one a size larger. It must at no time be allowed to suffer from want of water, and if supplied with weak guano water once or twice every week after the pots are full of roots, rapid growth will be encouraged, the brilliancy and size of the flower and bracts will be increased, and the foliage will acquire a deeper colour and more glossy appearance.

No insect appears to trouble the plant much, excepting scale and white mealy bug; but these, however, may be kept under by constant vigilance and attention on the part of the person in charge of the stove or other house in which the plant may be cultivated.

The best way to propagate this beautiful plant is by cuttings. Having taken a shoot, it should be cut up in pieces about half an inch long. This will give two eyes: one at the base of the cutting, the other at the top. The leaf stalk at the former should be trimmed off close to the stem of the cutting; but that near the top eye should be left entire, with about three-parts of the blade of the leaf attached to it. The cuttings are best pricked into small thumb-pots. The soil most suitable for them is a mixture similar to that recommended for growing the plants in. It will, however, require to be rubbed through a fine sieve, and a larger proportion of sand will be necessary. Great care must also be exercised to put plenty of drainage in every pot. If the pots are 3 inches high, at least 1 inch of drainage should be placed at the bottom, and this should be broken in pieces of a regular size: first put in about half an inch of larger pieces, then a half-inch layer of smaller pieces. This will cause the water to find its way through the soil in the pot regularly, rendering the soil equally moist throughout.

It often happens when the drainage is placed in a cutting pot in a careless way—large pieces and fine siftings all in one indiscriminate mass—that on turning the soil out to see what is the cause of one half of the cuttings in the pot striking properly and the other half being dried up, one half of the soil is found to be as dry as dust, whilst the other part will be quite wet. The cause of this is not placing the drainage properly in the pot. This is a point I am very particular about, whether the pots are for cuttings or grown-up plants.

The soil should be pressed into the cutting pots so as to be moderately firm; then a quarter of an inch of clean silver sand should be put on the top, and when this is pressed down there should be a space of not less than half an inch between the surface of the sand and the rim of the pot. This is another point that should never be lost sight of in making-up cutting pots or pans for any kind of plant: for if the pot is filled up level with the rim, and the sand is pressed down very closely and firmly, in a short time a solid crust will be formed by the sand, and when it is found necessary to water the cuttings, the water runs off the sand instead of passing through it; but when there is a space left between the rim of the pot and the sand, that space will generally hold sufficient water to wet the whole of the soil in the pot; if not, more can be added as soon as that previously applied has soaked away. Want of attention to minor details such as those I have here mentioned is often the cause of many being unsuccessful in whatever they may undertake, whether it be the propagation and management of plants or anything in connection with business of other kinds.

Having properly prepared the cutting pots, the cuttings may be inserted in them, one in the centre of each pot. They should be put in to a sufficient depth to be made firm in the soil. If the hole made by the dibber is an inch deep it will be sufficient for all purposes. The soil should be pressed close to the cutting.

After the cuttings have all been put in they may be watered, and allowed to stand on the potting bench, or on

a curb in the stove, till the water has soaked through the soil, so that the whole body of soil and the drainage may be in a good condition before plunging the cutting pots in the propagating frame. If the plunging material is in a proper state as regards moisture, no water need be given before the cuttings are struck. The soil is thus prevented from becoming sour, and, as a consequence, the cuttings root more quickly, and grow much more freely afterwards. A bottom heat of 70° will be found sufficient.

As soon as the cuttings are struck, and their roots have reached the sides of the pots, they may be shifted into 5-inch pots, which should be again plunged in a similar temperature until the roots have reached the sides of the pots. By this time each plant will be from 5 to 7 inches high, and its stem thickly studded with flower buds. The plants should then be taken out of the plunging material and placed in a moist stove as near the glass as possible, and after remaining in that position a week or two may be gradually inured to the temperature of a cooler house. From there they may be taken into the conservatory, or wherever they may be wanted.

Plants grown on in this way are fine objects for decorative purposes; and one of the most useful features in this most beautiful plant is that it may be had in bloom from one year's end to the other. No nobleman's or gentleman's establishment, where a constant display of gay-blooming plants is required, should be without a hundred or two of these beautiful plants in various stages of growth. I venture to predict a brilliant future for this lovely Mexican. At present its price places it beyond the reach of many, but I consider if ever any plant was cheap at two guineas this is. I have no doubt but in the course of two years it will be sold in Covent Garden Market by the hundred or thousand at 1s. each. What we want now is the same plant with scarlet, red, purple, and white bracts.—J. WILLS.

CROSSING THE EARLY HARDY VARIETIES OF GRAPES.

I HAVE recently had a letter from a gentleman in Lincoln to the following purport:—"I have seen lately in THE JOURNAL OF HORTICULTURE a paper from you relative to the crossing of many kinds of fruits, but I do not see Grapes mentioned amongst the number. I write to ask you if you ever do anything in that way, because many thousands about London, and, I may say, over the midland counties and south of England, are growing Vines in cool houses, ground vineries, and out of doors. These classes, at least most of them, being in business, or much engaged all day, do not keep a gardener, and, therefore, cannot attend to a furnace to heat their houses, but love to cultivate the Vine—I say these classes feel the want of a greater variety of early hardy Vines, with large berries and good flavour. Another acquisition for the above classes would be the raising of an early Grape without stones, and of good size and flavour. Perhaps the crossing of the Black Monukka or Sultana with some of the best early kinds might bring about this result. You may ask me, Why cross a stoneless Grape at all? but you are aware that all stone fruit stand still while the stone is forming—the Grape amongst the rest. Now, I want to save the three weeks, the average time the Grape is standing still. By producing an early Grape without seed, I am convinced you would be doing a great good to a very large class, who would cause a very large and, I might say, a very profitable demand for it."

Next year is likely to witness the "battle of the new seedling Grapes," and by the flaming descriptions given of them, it will be all up with our Muscats, Buckland Sweetwaters, Trebbiano, Alicante, and Lady Downe's as soon as the new sorts come into bearing. The new sorts, however, being described as principally of the late kinds, and requiring fire heat to bring them to perfection, I think that something new in the way of hardy early Grapes is wanted for amateur growers with unheated houses.

I am at the present time forming a collection of the very earliest hardy Grapes to plant in places in the border of an unheated glass-covered wall, and have the following planted, or about to be planted out—namely, Early White Malvasia, the very earliest of all white Grapes, and of excellent flavour; Madeline Royale (Rivers), Early Smyrna Frontignan (Rivers), Muscat St. Laurent, very early, with Muscat flavour; Royal Muscadine, Foster's White Seedling, Chasselas de Falloux, Early Saumur Frontignan, and the true Esperione. I should

be glad if any grower could add some good early sort to the above list, and more especially an early variety with only one stone in the berries. The noblest black Grape we have, the Damascus, has only one stone in the perfect berries, but it is a late Grape, and rather a bad setter. The Sultana I do not grow, nor any other seedless Grape except the Black Monukka. This is a most interesting variety, producing very large bunches, with small, oval, heart-shaped, seedless berries, and the flavour is very rich and vinous. When left to hang long on the Vine it is delicious to eat, or put into jellies. As the flesh is so crackling, the berries can be eaten skin and all. I intend trying to cross this variety with some of the best of the early sorts, and as the seedlings will be fruited in pots, three or four years will suffice to prove a large collection.

Perhaps some other growers may try their hands at raising some new varieties of hardy early Grapes, for there is a great want of showy kinds with large berries both for early forcing and for growing in unheated houses. The list of late Grapes, or varieties that require fire heat to come to perfection, is now extensive, and it will require very good seedlings indeed to equal our Muscats, Frankenthal, Alicante, and Black Damascus.—WILLIAM TILLERY.

PROPAGATING PELARGONIUMS.

I THANK Mr. Stewart for his reply to my communication, and hasten to inform him the reason for coming to the conclusion at which I arrived.

My firm opinion is (and I believe a great many propagators of softwooded plants will bear me out), that cuttings of softwooded plants require a change of air every twenty-four hours at least, to carry off damp and other impurities, which accumulate in either a bell-glass or close-kept frame—damp which is so destructive to Pelargoniums and other softwooded cuttings.

Mr. Stewart in his communication, page 419, says that his cutting beds are well watered before the cuttings are planted, and that a thorough soaking is given after the cuttings are inserted. I prefer letting the soil have no water until after the cuttings are planted. Mr. Stewart also says that he shades in very bright weather, and gives "no air" until the cuttings begin to grow. It is here where "the mist" came over my eyes, and I shall be glad if Mr. Stewart will make me see more clearly by stating exactly how many cuttings per thousand he actually loses by his plan.

We do not begin so soon as "R. E." page 277, whose plan is good, only it involves more labour; but we begin during the first week in August, and finish about the beginning of September, or very often the middle if other work is pressing, and we do not cut away at the plants indiscriminately, but take a cutting here and there from the sides as well as from the middle of the beds, when a shoot can be cut off without being missed. By so doing the beds are not robbed of their beauty, but, on the contrary, they are simply regulated and put into shape.

As I before remarked, Mr. Stewart's plan may answer under his own management, but I think a Pelargonium struck in August will keep through the winter better than one struck in September, unless the propagator can run to the coal heap just as he likes. However, if Mr. Stewart will convince me that he does not lose more cuttings on the close system than those who place them in the open air, I will frankly admit that I have learnt from him a good lesson. Mr. Stewart was asked to give his method, and he did so in a very kind manner, and I am sure he will pardon me for commenting on his communication.

Does Mr. Stewart grow much of the Pelargonium Gold Pheasant? It is a much better grower than Golden Chain, and a variety which I think will supersede the latter. If Mr. Stewart does not grow it for borders, I should be happy to send him a bundle of cuttings.—JOHN PERKINS, *Thonham*.

HAVE PATIENCE WITH PEAR TREES.

I WANT to record a word in favour of a Pear tree—for the sort in particular, and to encourage amateurs in a patient waiting for good results.

I planted a small tree of Beurré Clairgeau amongst many others either eight or nine years ago. It grew vigorously, and after four years bore a good crop of fruit, which it has continued to do since, but mealy and poor in flavour. This year

however, it has borne the crop as follows:—276 Pears safely gathered on the 20th of September; weight of first size 7½ lbs. to the dozen; second size 5 lbs. to the dozen. Some were fit for table about the 20th of October, and some were in the highest condition on the 12th and 14th of this month (December); quality very good, juicy, firm, very sound, and of very good flavour, superior to most bought Pears of greater renown.

The tree stands about 11 feet high, occupies little space, is a pyramid clothed from the ground, and as handsome as can well be.—CHARLES ELLIS, *Upper East Sheen*.

VINE-GROWING AND NATURAL TEMPERATURES.

I SEND you an abstract of the climate of Jerusalem, as being one that cannot fail to interest your readers. This abstract I have taken from the Journal of the Scottish Meteorological Society for the quarter ending June 30th, 1867. It is accompanied by a most valuable comment; but I do not propose quoting from it, contenting myself with asking your readers to turn to "H. S.'s" two letters, at pages 113 and 212 of the last volume. I most sincerely thank him for having drawn my attention to the practical lessons to be gained from the study of this particular climate.

I will now turn to the other portion of my title, Vine-growing. I have been for more than a year intending to send you my views and practice; first, I had not time, and then I waited to see what "H. S." would say; but he states, in answer to "G. S." at page 381, that he has "no mode of Vine culture," so I will now send it in the form of a letter. I do this because I am not prepared to write a treatise, nor even claim as "my treatment" the plan I thus commend: it is simply the plan I follow. Let those whose eyes are not closed, and whose ears are not stopped, think of these things as well as I do, and judge if it will suit them. I cannot and do not say it will enable either me or any one else to take the prizes given for Grapes at the London shows over the heads of gardeners. Only the cost determe from making the attempt at present. When it is worth my while I will try; till then I leave this art out of the question, and apply myself to the cheap production of Grapes.

Shape of Vinery.—If there are no reasons other than cost to bias the decision, the span-roof is the best; but if you have a wall, make the house a semi-lean-to with a tall front.

Ventilation.—By all means adopt the double ridge board with the rising eap. I should also advise a front ventilator to be used to put the Vines in the house to rest, or retard them when required.

Glass not wider than 12 inches; 15-oz., except in doors. Laps to be puttied.

Borders all inside, to stand on single brick arches made half round, no mortar being put between the brick ends; to run across the house. The front foundation to be put in after the back, sides, and arches. No excavations required, but remove the soil, and if the subsoil is clay, slope it to the middle, and there have a good drain. The door can be reached by an incline either to the middle or end. The bed should be made by filling the arches level with good drainage, this being covered with soda wrong way up, and then with the soil, with a due quantity of helps to drainage, and some bones.

Mode of Planting.—If a span-roof, in two or four rows, as of 10 or 20 feet in width; if a semi-lean-to of not more than 12 feet wide, in rows across the house 6 feet apart. With wider houses more room is required to let the light down the rows to the back wall. Vines should be put in at every 4 feet, and planted after they have started fairly; to have four starts, each a foot apart, and when planted a good peg should be put between each start or shoot. This is nothing less than layering each young rod. Grow them as long as you can without any stopping, laterals included—that is, keep every leaf you have room for. When they have grown as long as they can, cut every other shoot halfway down. When these are well going again, treat the remaining ones the same, and grow all up again, thinning the first-cut-down to make room for the last if needed. When you want the Vines to go to rest, let out the fires and open all the ventilators, leaving them open all night. This is sufficient anywhere in England, except during June, July, and August. If you want to start the Vines in these months, do not require a rest from them; prune them in, cutting all leaves off, and with young Vines shorten them to the first cutting-down place. As the Vines become strong you can reduce them to two rods each if you like, or cut them down

in alternate years, grow a young cane on the border, or shorten them in; but grow a young cane by all means even if you cut it off again, to keep the roots going during the stoning and ripening time; from the beginning of the crop to the resting time always have young growth.

Watering.—Do it every week without fail, and feed your Vines with what you thus wash in, changing the manure weekly, and giving very little each time.

Syringing.—With young Vines syringe night and morning, and oftener in warm, dry weather, when plenty of air is given, and the leaves are fairly grown—always with warm water. Nothing is better to make the Vines grow than the syringe, nor is there anything that helps them so much to swell their canes when they are going to rest.

Temperatures.—Take the climate of Jerusalem, and then you will grow Grapes ten months in the year, and need not fear cropping the year after planting.

I will not now occupy your pages further, though to enter fully into each of these heads page upon page could be written, neither will I give examples lest I may seem to boast. I have nothing to gain by giving my name to the public. I practised gardening for pleasure, and now continue it for profit.

Recapitulation.—In taking out a patent you are required at the end shortly to state what you specially claim as new. In this case I claim nothing as new, so I will instead fill up the place with what I consider the most important points. These are—length of season of growth, and particularly after the crop is gathered; the use of the syringe more or less all through the season, whether there is a crop or not, thus insuring continual growth; a dry, well-drained border, enabling you, without the least chance of making it sad, or water-logged, to wash food down to the roots each week, as suited to the wants of the Vine at that particular period of its growth; system of putting as many Vines as possible in a house, and mode of obtaining as many canes from one Vine as possible, and thus being able to shorten or prune one cane without giving the roots any check—a mode of quick returns, well suited to amateurs' wants and patience.

"H. S." says he has obtained 1986 bunches from 1700 square feet of glass. If planted in this way I am of opinion 8 ozs. per square foot can be obtained year after year.—G. H.

ABSTRACT OF METEOROLOGICAL OBSERVATIONS MADE AT JERUSALEM FROM 1ST OF MARCH, 1865, TO 28TH OF FEBRUARY, 1867. Height above the sea, 2500 feet. Monthly means and extremes on a mean of these three years.

	Highest in Month.	Lowest in Month.	Monthly range.	Mean of all the highest.	Mean of all the lowest.	Mean daily range.	Mean temperature.	Number of days.	RAIN. Amount in inches.
January	71.1	25.0	46.1	53.4	40.9	12.5	47.2	10	5.38
February	69.5	30.9	38.6	55.4	42.3	13.1	48.4	8	3.57
March	88.0	36.0	52.0	67.5	49.1	18.4	54.4	6	1.53
April	85.6	42.0	43.6	69.6	50.0	19.6	59.8	4	0.26
May	100.0	48.5	56.5	79.2	56.5	22.7	67.8	1	0.12
June	102.5	54.2	48.3	83.0	63.0	20.0	73.0	1	0.00
July	95.3	57.1	38.2	86.0	63.6	22.4	74.8	0	0.00
August	101.0	56.8	44.2	87.5	65.0	22.5	76.2	0	0.00
September	100.0	54.0	46.0	83.6	60.9	22.7	72.2	0	0.00
October	94.9	46.8	48.1	81.1	60.6	22.5	71.8	3	0.52
November	89.0	39.0	50.0	68.9	53.1	15.8	61.0	6	1.50
December	71.2	35.1	36.1	56.2	43.5	12.7	49.9	11	3.09
Year	102.5	25.0	77.5	72.8	54.1	18.7	63.4	50	16.28

WORKING ROSES ON THE MANETTI STOCK.

How true is Mr. Radclyffe's observation, that we must wait two years before we can see any bloom worth notice from a removed Briar Rose bought in from a nursery; and, on the contrary, a Manetti Rose removed in winter or autumn generally blooms, and does better after removal. Thousands of rosarians, myself included, have fully experienced all this. Briar Roses do well with me, because I have a rich, deep loamy soil, but Manetti Roses do better.

I have budded Manettis in the following manner, and find they take more freely:—Suppose a Manetti stock to be firmly rooted, having had a year's growth, cut it down close to the soil in the spring. Three or four strong shoots are sent up. I bud all of the shoots about 3 inches from the ground, say in June or July, let them remain dormant, and cut them down in the

usual way in the following spring. I let them all grow until the shoots are a foot high—about June—I then soil them up like a Potato ridge. In November I take the whole root up, and divide the plant. I have thus three or four Manetti Roses from one stool. By this means one can propagate many Roses in a small space. I have never yet heard of any other person practising this system. I find it to answer well.—HENRY TAYLOR, *Fencote, Bedale*.

THE GLADIOLUS AND ITS CULTURE.

THE Gladiolus has long been a favourite flower with me, and when I first grew it, *G. insignis*, one of the hardest of the tribe, was treated here as an exotic.

Had the melancholy but valuable communication of "D.", of Deal appeared in November, 1866, instead of 1867, I should have had a cordial fellow feeling with him, for in that year my Gladioli were wretched. This year, with the exception of *Brenchleyensis*, not one of which has flowered, they have, with the same treatment, in the same place, and in soil of exactly the same nature, done remarkably well.

"D.'s" experience in 1867 is similar to mine of 1866. In that cold year many of the Gladioli never bloomed at all with me; and others, especially John Waterer, Madame Pereire, and Madame Leseble, after blooming well, immediately began to show signs of premature decay in the foliage, and when the roots were taken up, they were black, shrivelled, and dead. The bulbs of Clemence and Reine Victoria had so many black spots that I almost gave them up, but to afford them a chance they were planted this year, and produced fine spikes of flowers, and made good roots, without a black spot upon them. Another grower near, who in 1866 was very successful, has this year been equally unfortunate. Can any of your more scientific readers suggest the reason, or better still, a remedy?

Possibly any way of treating Gladioli may interest some of your readers. I do not like them in beds. The Tulip, the Ranunculus, and many other lovely flowers, are eminently fitted for beds. I do not think the Gladiolus is. The borders surrounding my little flower garden are raised, and broken-up with pieces of limestone, with spaces of varying size between each stone. These spaces are now filled with double Tulips and Hyacinths in pots. As soon as their bloom is over, the bulbs are taken up, put away to ripen, and their places refilled with fresh compost, a little dung being placed about 10 or 12 inches below. The Gladioli, which have been reared as will be afterwards described, are put out of their pots into the vacant spaces. I use very much the same compost as for the Lilium—rotten turf or fresh soil, and as I obtain it from strong land, I add one-third of a mixture of sand, charcoal, and cocoa-nut fibre, sometimes a little peat.

The best and most valuable kinds I always plant in 6-inch pots, one in each, about the end of March. They are then placed in a frame with gentle heat, alongside half-hardy annuals, and plenty of air given. By the time the blooming of the Tulips is over, or soon afterwards, the Gladioli are about 6 inches high and ready to plant-out. The bulb in the ground is covered with 4 inches of soil, and as the leaves grow they are moulded-up with an inch or two of sand, or sandy loam. In dry weather plenty of water is given, and, perhaps, once a-week liquid manure. In one case I found a top-dressing of soot useful. I had a large, flat, indented bulb of *Shakspeare*. When its leaves appeared they were of an unhealthy whitish green colour. I feared, and I was not alone in my fear, that I should lose it. I placed at different times a little soot round the plant, and soon had the gratification of seeing it recover a healthy hue. It bloomed and produced two good bulbs.

I wish I could ascertain the best time for planting in the open ground. An enthusiastic grower, whose method I give afterwards, plants in February, and his flowers do well. M. Souchet recommends later planting. I had last November some very small bulbs which I did not care to store; they were planted in the border, a little protection given, and covered with a hand-glass. They all stood the winter, and some of them bloomed well and made fair bulbs.

I have found the flowers much improved by shading. I use a cylindrical case, 9 inches in diameter, and 24 inches long, of the ordinary 24-inch galvanised wire; this is fastened firmly to a stake, and covered with thin muslin. The flower is safe from wind, rain, and sun, and its colours are both more vivid and more perfect.

My friend referred to before pursues quite a different plan.

He grows his Gladiolus in a bed. The soil of his garden is very strong; he takes it out 3 feet deep, then throws in turf 4 inches thick, next a layer of cow dung that has been well turned over in winter, then rotten turf and loamy or sandy soil. On this he plants the bulbs in cocoa-nut fibre, and covers with 4 or 5 inches of loam. I do not agree with this. I cannot see of what use the manure 18 inches below the bulbs can be; the rootlets never seem to penetrate more than 6 inches. I must, however, admit he has splendid flowers.

Added is a list of the varieties we consider best here, and that bloom well with us. Those marked with an asterisk (*) are best.

White.—*Shakspeare, *Princess Mary of Cambridge, clear flower, but petals rather pointed; *Reine Victoria, Marie Dumortier, *Madame Leseble, and Madame Pereire.

Lilac.—*Impératrice Eugénie, *Belle Gabrielle, *Madame Furtado, and *Madame Vilmorin.

Rose.—Dr. Lindley, Madame Basseville, Princess Clothilde, Charles Dickens, and *Penelope, flesh.

Cerise.—Florian, Le Poussin, Lenué, *Duc de Malakoff, *Madame De Sévigné, and *John Waterer.

Red.—Achille, *Meyerbeer, Napoleon III., *Prince of Wales, *James Veitch, *Maréchal Valliant (very fine), *Sir William Hocker, and *Fulton.

This is not written under the opinion that the treatment here mentioned is the best, but in the hope of inducing those who have been much engaged in the culture of the Gladiolus to detail their experience, and to enumerate the varieties they deem the most choice, and the best worth growing by those who, having only small gardens, wish for the most select kinds.—E., *Darlington*.

WHAT IS A CORDON?

Is the course of the discussion which has recently been going on about French and English Gardening, the term *cordon* has been so frequently used, and in a sense so indefinite and vague, that a few words on the subject may not at present be unreasonable. The English equivalent of *cordon* is a line, and hence the French use the term in many different ways. It is employed to signify a line, cord, or rope. It signifies also the rim of a piece of money, the ribbon round a hat, and the ribbon of the Legion of Honour is also called a *cordon*.

In the early part of last century, when geometric figures were then, as they are now, so much in vogue in gardens, the strips of grass between the beds were called *cordons*; but this is the only sense in which it has been used in French gardening till of late years, when the term was applied to the branches of the Vine pruned on the Thômy or spur system, which were also called *cordons*. It is about five and twenty years ago that M. Du Rœuil introduced the word to express certain modes of training, which we have called "the spur system," in contradistinction to "the laying-in system" of pruning, because of its being in a continuous line, or like a rope. He defines *cordons* as "the primary ramifications of the stem, and which are generally simple," and in his work he speaks of many forms of *cordons*, using the word generically, and not specifically; as, for instance, the "*cordon horizontal simple*," which is exactly the form of the letter T; the *cordon oblique*, which is a simple branch trained obliquely at an angle of 45° against a wall or espalier instead of horizontally; and the *cordon vertical*, which is also a simple branch trained perpendicularly.

During the discussion above alluded to, one of the disputants used the term *cordon* in a very limited sense, conveying the idea that it referred only to the *cordon simple* manner in which Apples and Pears are trained to form edgings to garden walks, and to clothe the bases of walls; and a considerable amount of misapprehension has arisen as to what a *cordon* is, from this specific use of the term. *Cordon training* in its general sense means simply a tree with all its branches, no matter how many, coming directly from the stem, and all close-pruned so as to preserve them perfectly simple. Thus, Du Rœuil calls our horizontal mode of training the Pear in successive tiers of *cordons*, "*palmette cordon*." Mr. Bichaut, in his admirable little work on *cordon training*, defines the system as "a certain number of leading branches carried out, and on them spurs are developed, so that the branches look somewhat like twisted cables or chains."

Cordon, therefore, means not any particular form of trained tree, but rather a particular mode of pruning fruit trees, by which any branch or number of branches acquire the form of a

cordon or line. It is, in fact, what in English gardening we call a branch pruned on the spur system, which every gardener knows possesses no novelty. The only novelty connected with cordon pruning are the fanciful forms in which the French have of late years delighted to train their trees, but which do not in any way contribute either to their health, longevity, or fertility, more than our own practice which has been followed so long.

BEDDING PLANTS THAT WINTER WELL IN A COLD PIT.

ALTHOUGH from time to time vigorous attacks are made on the bedding system by those who wish for a return of the old-fashioned mixed border, yet it is apparent to every one that the system is still gaining ground. Whether a change is near or distant, there can be no question that the present demand for bedding plants is a heavy tax on the means of many who have to produce them, and the utmost ingenuity has to be exercised to furnish the necessary number every season; as a consequence, due attention is always paid to any plan which in reality lessens the labour or simplifies the means by which the end in view is attained. The great object aimed at of late years has been the wintering of a large number of plants with the least possible assistance from glass structures provided with artificial heat, and whenever glass can be dispensed with so much the better. With some plants this cannot be done without increasing the labour to an extent more than equivalent to the cost of employing glass, and of this class are the bedding *Pelargoniums*, which occupy the post of honour among bedding plants, but which are rarely met with in a fitting condition to plant out in May without having in some degree had the benefit of a heated glass structure during the preceding six months. Of these, however, enough has been said of late; and I will, therefore, confine myself to a class of plants scarcely less important, but which may be kept through the winter with much less trouble and expense. My object is to enable the inexperienced to make the most of the means at their command, and so to give to the more delicate plants the most suitable positions, while to the others may be assigned such quarters as can be afforded them.

In some communications which appeared in this Journal early in the autumn, the ease with which the *Calceolaria* could be propagated, and kept over the winter almost without the aid of glass, was pointed out, and without either pots or artificial heat. I wish that, in addition to the information then given, some easy means could have been devised for ensuring the success of this plant throughout the summer; but I fear we must employ such varieties only as possess greater constitutional strength than most of those now grown, and in so doing no doubt we must be content with either species or varieties not so ornamental as those we have hitherto employed. Amongst the plants, however, to which a cold frame affords sufficient winter protection, the bedding *Calceolaria* stands pre-eminent, and its capability of withstanding the influence of long-continued moisture is of the highest order; even a little frost does not effect its destruction when the change from that condition to one of a contrary kind is gradual. A fortnight or three-weeks seclusion from both light and air is also harmless to this plant.

Centaurea gymnocarpa.—This, though not hardy, is, like the *Calceolaria*, not killed by a slight frost. It will also endure the damp atmosphere and confinement of cold-frame treatment without suffering much. It is well to insert the cuttings by the 1st of October, which is a month earlier than *Calceolarias* are often put in; but they will do very well even put in at the same time as these. I cannot say that I have been so successful with *C. candidissima*; but its failure did not arise from the plant not standing cold, but from its not doing well with us during the summer. The plants became sickly, and decay set in at the ends of the leaves; the cuttings, therefore, were not a fair sample, otherwise I expect this plant is much more hardy than is generally supposed.

Gazania splendens is almost hardy, and plants in a sheltered position will sometimes live through a mild winter out of doors; but if cuttings are inserted in the cold frame early in October, they make, in April or May, as good plants as can be desired, and we have occasionally obtained cuttings in April from plants so treated, which formed neat little subjects by the usual bedding-out time. No plant that I am acquainted with does better than this, and looks better when planted out.

Nierembergia gracilis.—This and its varieties, though hardier, perhaps, than even the *Gazania*, do not strike so freely from cuttings put in about October; indeed, the plant is often a collection of flower stems. I have sometimes taken plants up and divided them, and planted rooted offsets in the cold frame or pit, but the success was never so great as with the *Gazania*. In sheltered situations in the open air, the *Nierembergia* often withstands the winter, and furnishes cuttings in February, which strike fast enough in heat. In the cold pit its defects would seem to be the absence of suitable cuttings, rather than its not standing cold, for we have many instances of its surviving the winter.

Cineraria maritima.—When well grown nothing can exceed the beauty of this. It certainly excels *Centaurea candidissima* in gracefulness of form, although the latter may surpass it in whiteness, and in the property of not running to flower; or rather its commencing to do so does not affect its appearance so much as in the case of the *Cineraria*; but the facility with which the latter is propagated, and the greater certainty of its succeeding when planted-out, give it an importance not always accorded to it. Cuttings put in early in October, make very good plants in May, with no more attention than is given to the *Calceolaria*.

Lobelia speciosa.—Although old plants taken up and pulled to pieces, with a little root attached to each, and so planted in the cold pit, will, in some cases, do very well, they do not always succeed. It is, therefore, better to raise seedlings in the ordinary way, as this plant seems less hardy than those previously named. Occasionally, however, batches of plants may be wintered in a cold pit, and if some very late seedlings were obtained, and planted before flowering, they would be certain to succeed.

Veronica Andersoni variegata.—This has not hitherto been adopted to the extent which it deserves to be, as it is certainly one of the prettiest of white-edged plants. It is readily propagated by cuttings put in at the same time as the above, and it is rarely that one fails to become a plant.

Eunymus japonicus aureo-variegatus.—This plant has with me failed to thrive so satisfactorily as was expected, the growth in summer being very limited. It is easily propagated, and stands well in the cold pit in company with the other plants named. Plants out of doors also withstood last winter, but they were under the snow. It is much to be regretted that its tendency to run into the green state is so general.

Pentstemon.—These being thought hardy, are only mentioned to state that autumn-put-in cuttings, treated the same as the others, form good plants by spring.

Erythraeus.—Like the *Pentstemon*, this is known to be hardy, but, nevertheless, it requires to be propagated every year. Slips or cuttings put in during October, furnish well-formed plants by April, from which other cuttings may be taken, which root freely under hand-glasses out of doors, or in any place where not too much exposed to the full sun.

Cupheas are certainly not so hardy, but will do in a cold frame or pit. They will not endure so much damp as the *Calceolaria*, and long confinement is apt to thin their numbers very much, but they sometimes pass through the winter with but little loss, and make good plants early in May.

Verbenas.—Not being always successful with them, I cannot recommend them for cold-pit culture in winter. Probably if the cuttings were put in earlier they might do better, but this is not always convenient, as the pit may have something else in it at the time. *Verbena pulchella* is the most likely to prove satisfactory, or *Verbena venosa*; the latter, however, not by any means so generally good as might be wished for. Scarlet and other-coloured *Verbenas* in general use are seldom taken up in time to plant here, and as none of them will endure the long confinement necessary when cold weather is prolonged, it is better to have a stock of plants elsewhere to propagate from when spring commences.

Petunias.—These will endure cold but not damp, so that I have never done any good with them here, and, in fact, have not tried them often.

Cerastium tomentosum.—Plenty of this should be secured in cold pits; not but that it will endure cold and frost well enough, but long-continued wet weather and a cold wet situation are sometimes fatal to it. This plant was not by any means plentiful last spring.

Besides the above, there may be many other subjects to which a well-constructed cold pit affords all the protection necessary in ordinary winters. My worthy friend, Mr. R. Fish, gives the preference to a turf pit over a brick one, and for

summer purposes perhaps it may be better; but I have often thought it harboured slugs and other insect enemies more than blackwork does; besides, the latter is neater. Generally speaking, an ordinary light is a sufficient protection, excepting in very sharp weather when there is no snow, then some additional covering may be put on; but snow is a very good protection, and it is seldom advisable to disturb it when once the pit is covered-up with this natural mantle. For some days after it has disappeared, and mild weather has set in, it is not advisable to let in the external air in too great quantities. This, however, will be best understood by the condition of the plants, or rather cuttings, inside. If they appear fresh and only covered with moisture they will sustain no injury, and may be gradually inured to the air; but if some are decaying, and mildew is attacking them seriously, let such be removed and drier air admitted, which, in fact, will be the case when the work of removal is being done.

It must be remembered that the object of relieving the heated structures of plants that will winter elsewhere is one of the reasons for recommending the plants named to be consigned to the cold pit, which, indeed, is better for many of them; and as it is supposed that all are put into the ground at once, and not into pots or boxes, only the hardiest plants are enumerated. The little trouble they give must be apparent. I need hardly remark that *Verbenas*, *Petunias*, and *Cupheas* would be better kept elsewhere, as well as *Lobelias* raised from seed in the ordinary way. All these, and even bedding *Pelargoniums*, will do very well in the cold pit, excepting during the dark dull days, say for two months or more, beginning with the 1st of December. A well-filled cold pit affords a greater number of plants in spring than any other structure of a like size, and that, too, with but little trouble or expense.—J. ROBERTSON.

EAST LOTHIAN PURPLE AND WHITE STOCKS.

I WAS much pleased to observe that Mr. D. Thomson had, in a recent number of this Journal, directed attention to the excellence for bedding and other purposes of what he calls the East Lothian Purple and White Stocks. He most justly ascribes the production of these to Mr. Campbell, gardener, Traprain, a name well known in East Lothian in connection with the culture of Stocks. Although it is several years since Mr. Campbell, after much care and labour, succeeded in producing these, still, as yet, his productions are comparatively little known out of the district in which he resides. He was generous enough, however, to distribute his small stock of seed amongst his gardening friends in East Lothian, and time enough has elapsed to prove and establish their constancy.

Several years' residence in the locality enabled me to see, at the raiser's and other places, and to judge of the merits of these Stocks, and I can fully corroborate all that has been written by Mr. Thomson in their favour. Indeed, for the decoration of the flower garden in autumn, whether grown in beds or borders, they are invaluable. They continue to bloom long after most of the bedding plants now used have been removed; thus having a twofold use—namely, affording a supply of cut flowers at a season when the usual resources are gone, and extending the season of bloom.

Having last autumn, through the kindness of the raiser, been supplied with a few seeds of these Stocks, and the seedlings being duly cared for, two rows were planted under the shelter of the mansion. These are still (December 20th), wonderfully gay and attractive. Others planted in an exposed situation have only lately ceased to be so. The purity and brightness of the flowers, the certainty of 70 or 80 per cent. being double, and their compact bushy habit, are other high recommendations to these Stocks.

Apart altogether from the Scarlet Stock, so much grown in East Lothian, and mentioned by Mr. Thomson, I may state that Mr. Campbell has also a scarlet of his own producing. I have had the two varieties growing side by side last season. The flowers of the latter are, I think, brighter, and the habit is certainly more dwarf and compact. The per-centage of double flowers is about the same in the scarlets as in the Purple and White.

In pots for in-door decoration these Stocks also become highly serviceable. The plan which I have adopted when I want them for this purpose is to deprive of their flower spikes a few of those planted-out, and which have proved to be double; to lift them carefully, and to pot in October; to water and place them in a shady situation; and on the approach of

severe weather, to move them under protection. Such will flower at almost any season, but are better of being kept growing, and of their flower spikes being kept off till May or June, and shortly afterwards they will be a mass of bloom, fit for almost any purpose, making a display such as few plants could excel or even approach.—J. A., *Wallhouse Gardens*.

CUPRESSUS MACROCARPA AND OTHER CONIFERS.

IN Mr. Kent's excellent observations on the *Cupressus macrocarpa* I wish to notice one point in which my experience differs from his, and to give a word of encouragement to those who live on heavy clay soils, as regards the growing of this very beautiful Conifer.

I may say without fear of contradiction from any one acquainted with the spot where I live, that it is on one of the stiffest clays in England. In 1860, I made a mound in an open and airy situation with the clay dug out in making a pond, some of it only being the top spit with a barrowload or two of rather finer soil for the roots to settle in. In this I planted a *Cupressus macrocarpa* from a neighbouring nurseryman, which was then, I should imagine, about 6 feet high. Two years ago it was nearly blown down, but it is now 26 feet high, and 13 feet through in the widest part, and it would have been much wider than this had I not cut off the tops of many of the largest branches in the manner described by Mr. Kent recently, as it was growing lop-sided. Notwithstanding the severity of last winter, the thermometer here having been down to zero, it only lost one branch, and is even at its present age a very beautiful tree and growing vigorously, although within a hundred yards or so of it *Pinus insignis* was killed.

Not far from this tree, but in a rather more sheltered situation, I have three specimens of *Cupressus Lambertiana* (which is so similar in its character to *macrocarpa*, that as far as fitness of situation is concerned, it may be considered identical),* which I raised from seed, I think, in 1857. They are all growing in still stiffer clay than *C. macrocarpa*, as one of them is in the blue clay which was taken from the bottom of the new-made pond, and the other two are in the original soil which has never been moved. They are all growing most vigorously, none of them being materially injured except one, which lost 3 or 4 feet of its leader and side branches last winter, but as I have not yet cut it, I measured it yesterday, and found it to be rather over 10 feet, and nearly as broad as it is high. Of the other two both of them are nearly as large as this; one is not injured at all, and the other has only lost one or two small branches, but in other respects is perfectly healthy and of a beautiful colour. In fact, I have never seen, hardly I think in the *Wellingtonia*, such rapid growth, as they spread laterally in the same luxuriant manner.

Now, at my father's place, only about a mile and a half from this, a specimen of *Cupressus macrocarpa* of nearly the same size as mine, and which was in a most luxuriant state of growth, was killed, though it was protected on three sides by a house, walls, and trees, and the thermometer ranged a degree higher than mine here, but it was in a lower situation and near a river; whilst some plants of *Cupressus Lambertiana*, which I raised from seed at the same time as those before mentioned, were either killed or so much injured that they will never be worth anything.

From the above, and observations elsewhere, I gather one or two facts, probably well known to other observers, but which may be useful to those about to plant.

1st, That *Cupressus macrocarpa* will grow most luxuriantly in a stiff clay with a "good heart to it."

2nd, That it should not be planted, nor, indeed, any other half-hardy Conifer, in a low damp situation, or near a river.

3rd, That it should not be planted at the corner of a house, nor in any place where there is a strong draught, as this is even more deadly than severe frost.

I may add, that the only Conifers that I have tried that do not seem to thrive in clay, are the *Deodar* and *Pinus cembra*, the former especially looking very unhealthy, and making hardly any progress; the latter looks healthy, but grows very slowly. *Picea cephalonica* grows very well, but making early shoots, which are cut off by late frosts, it does not, therefore, make much progress here. *Wellingtonias* grow most luxuri-

* They are the same.

antly, as, I believe, they do almost everywhere, except in very shallow and poor soils, and I have some which I raised from cuttings, which it would be impossible to tell from seedlings, so symmetrical is their growth.—A SOMERSETSHIRE PARSON.

CATERPILLARS ON GOOSEBERRY BUSHES.

IN "Manures for the Many," gas ammoniacal liquor is highly spoken of as a manure; and in various parts of this Journal, from time to time, tan strewn underneath the bushes is recommended for the prevention of caterpillars. Gas ammoniacal liquor I know is a very dangerous agent for inexperienced persons to deal with. The way I propose to use it is as follows:—To sprinkle over a cartload of tan, say 10 cwt., and well mix in it 5 gallons of ammoniacal liquor; then to spread the tan so mixed under the bushes to the depth of 2 inches. Would this injure the trees, and do you think it would have the desired effect?—R. HAMMOND.

[We are decidedly of opinion that spreading tan as you propose will effectually protect the Gooseberry bushes from the ravages of caterpillars. It prevents the fly emerging from the soil where it is in the pupa state, and it prevents the caterpillars descending into the soil to assume the pupa form; for the insect in all its stages seems to have an antipathy to tan. The fumes of the ammoniacal liquor would tend to check the visits of the fly to deposit its eggs on the leaves. We think the proportions you propose are good, and would not injure the bushes.]

PROLIFEROUS FERNS.

I HAVE read somewhere that it takes a higher order of generalship to make a well-arranged and orderly retreat than to march on to an easy victory with drums beating and colours flying; but I have never yet heard of a general who appeared to relish recording his own defeat, and yet that anomalous position is now mine.

Having built up a theory on seemingly good foundations, I am now obliged to demolish it with the "stubborn facts" of a far better pteridologist than I can ever pretend to be, and at the same time I have to record my own defeat; yet there is something so innately beautiful in truth, that I cannot but be glad to have arrived at it even at the expense of a pet theory. Mr. Wollaston kindly allows me to state his experience of proliferous Ferns in general, which, it will be seen, sets at rest all doubt as to their not being proliferous in a wild state; but I had better give Mr. Wollaston's information in his own words.

"Believing as I do," writes Mr. Wollaston, "that Ferns in general have one common origin, it naturally follows that for the same reason that exotic Ferns are viviparous in numerous modified ways, so likewise are the British, varying in their prolific tendency according to habitat, climate, culture, &c."

This is, then, if I may so say, Mr. Wollaston's theory or reasoning, and it is borne out by the following fact:—

"I have found," says Mr. Wollaston, "at least a hundred plants of *Polystichum angulare* both normal and abnormal (one a normal form as long ago as 1855), that had bulbillæ on them in their wild state."

Mr. Wollaston then proceeds to the "possible causes of the development of bulbillæ" on *Polystichum angulare* (which, he says, he has found on the rachis of recent and one-year-old fronds), in these words:—"A moist atmosphere is almost indispensable for the development of bulbillæ; and coupled with heat, as in a forcing house, it is the greatest incentive.

"I do not agree in toto with 'FILIX-FEMINA,' that it is 'an effort of nature to throw off exuberant health' (see JOURNAL OF HORTICULTURE, Nov. 28th); but it is the nature of plants in general, and more especially of Ferns, to reproduce themselves in some way, and one of the ways is by bulbillæ. This is shown most strikingly if, by an accident, a Fern is trodden on or injured; it will then throw off numerous small plants, or, if at all bulbiferous, innumerable bulbillæ.

"Arrestation is another cause of viviparous growth—that is, if a frond of a Fern is broken off, or pierced by an insect, or imperfect, as in the abnormal growth of the marginate or interrupted varieties of *Scolopendrium vulgare*, one or more bulbilla may be seen. In the variety of *Scolopendrium vulgare* called *Wardii* I have seen more than one hundred young plants on one frond.

"It may not be generally known, although it has been pub-

lished before, that from each old frond of *Polystichum angulare*, *Scolopendrium vulgare*, and probably many other species, a young plant may be produced by taking the club-shaped portion of the stipes with a rootlet attached (each frond having at least one), and putting it into a pot of sandy peat with a little bottom heat.

"A damp atmosphere and arrestation of growth I believe to be the chief causes of the viviparous development of British Ferns."

After this evidence from so high an authority as Mr. Wollaston, I feel that there is nothing left for me to do but to retreat as gracefully as may be, conceding to Mr. Wollaston the honour of having settled beyond dispute that the capability of becoming proliferous is inherent in Ferns simply as Ferns. Thus I would say, Ferns have the power of reproducing themselves from seed as well as from bulbilla or buds, the development of this latter power being incidental to certain exciting causes not yet thoroughly understood. I would at the same time suggest that some better name than "bulbs," "buds," or "bulbilla" be given to the reproducing organ.

In the cultivation of proliferous Ferns my experience differs from that of Mr. Wollaston in so far as regards "arrestation" being a cause of viviparous growth. In those proliferous Ferns which I have under cultivation I find that the healthy fronds have the most bulbs.

I hope that all Fern hunters will look out for bulbilla on Ferns in their wild state, and make their success public as soon as possible.—FILIX-FEMINA.

IMPROVEMENTS IN BUILDINGS

AND STRUCTURES TO BE EMPLOYED FOR HORTICULTURAL PURPOSES.

A PATENT, entitled as above, has recently been obtained by a gentleman very favourably known as a fruit cultivator. The "Cylinder Vinery," described and figured at page 387 of our last volume, is constructed on the principle detailed in the following specification:—

"The object of this invention is principally to form glazed structures for protecting Vines, Pears, Peaches, Nectarines, Apricots, Figs, Strawberries, Potatoes, or other trees or plants, in such manner that the structures may readily be removed or the sheets of glass taken away from them at such times as they are not required for protecting the trees or plants. For this purpose I employ bars of wood in which grooves are formed for supporting the sheets or panes of glass, or it may be for supporting slates, and which bars are boiled in creosote or treated with other preserving agent to retard their decay; the sheets or panes of glass or slates are merely inserted into the grooves in the bars of wood, and are so held without putty being employed; the grooves are by preference made in all cases to pass diagonally into the bars from one or other of their edges, and I also form the grooves which are to receive the sheets of glass or slate wider at the bottom than at the mouth or entrance; this allows of a groove smaller at the mouth being employed than could otherwise be the case, as the wood at the mouth of the groove may spring back on to the glass after the edge of a pane of glass has been inserted into the groove; the grooves may be thus formed by first making a groove with a circular saw and then widening-out the bottom of the groove by a plough plane inclined to one side. The above plan also admits of turning circles.

"For forming a ridge roof I proceed as follows:—I drive posts into the earth at intervals along one side of the row of trees or plants, afterwards I measure-out the space to be covered, and drive along the opposite side of the row of trees or plants a similar row of posts, and affix to them a similar bar in which also a groove is formed leading from its upper edge nearest to the row of trees or plants. Along the centre between these two rows of bars I drive in a third row of posts which are to project a greater distance from the surface of the ground than the rows of posts on either side of them, and to the top of these central posts I affix a bar having formed in it two diagonal grooves which proceed from its two lowest edges; the grooves in the rows of bars so fixed in position serve to carry the sheets or panes of glass which are to glaze-over the space between the rows. To insert glass into the grooves the upper edge of each sheet of glass is first inserted into one of the grooves at the bottom of the upper central bar, and the lower edge of the sheet of glass is then dropped into the groove at the top of one of the outer bars to allow of the sheets of glass being thus shipped into the grooves; this is chiefly of use in inserting a new pane of glass, supposing there be a breakage at any time. The grooves in the upper central bar are made deeper than the grooves in the outer bars. On the north side of a structure slates may be used in a similar manner. To form upright walls or screens of glass or slate I drive into the ground at intervals apart from one another rectangular wooden bars which have been treated with creosote, as above mentioned, and which have had diagonal grooves formed along them

leading from two opposite angles. The bars or posts are driven into the ground in such manner that the grooves at the angles of one post shall come opposite the grooves at the angles of the posts next to it. The sheets of glass or slate are then slipped down the grooves and are so held in position. The posts may, if desired, be further secured by wire tightened by nut and screw at one end. In order to keep the glass (or slate used in the same manner on the north side) tight I insert a small cord (soaked in creosote) into the groove; I then place the glass or slate in the groove against this cord, and I tighten the whole work by means of a wire inserted through all the bars and screwed-up at one end. Screens of glass or slate thus constructed may be made into any shape required, being either made in straight lines, circles, squares, zig-zags, or otherwise; or in place of this what I call glass hurdles may be formed of iron uprights which are to be driven into the ground, and which carry grooved horizontal bars, into the groove of which the bottom and top edges of the sheets of glass are inserted. To form moveable lights for covering rows of Vines, Strawberries, or other trees or plants, I take two pieces of rectangular bar of some feet in length; I insert the glass (slate for the north side) into the groove of each bar, and draw the bars tightly to the glass by means of a stout wire with nut and screw at one end; if I wish to stiffen this tight I place two or three strips of sheet iron of the thickness of the glass, and screw the bars tightly against these irons.

"For growing Peaches, Nectarines, Grapes, or other fruit out of doors on walls I employ for this purpose a building or structure formed in the following manner:—On the north side I construct a slate wall (on the same principle as I have described for constructing a glass wall); about 3 feet in front of this slate wall I construct a glass wall 1 foot lower than the slate wall, against this glass wall I train fruit trees; when the sun shines on the slate the heat is thrown on to the trees on the glass wall, the heat being prevented rising from the slate wall by a foot or more of glass being inserted diagonally in the cap of the slate wall, forming a cave; my plan is then not only to give greater heat to the fruit and more light all round it, thus securing colour and flavour, sufficient air being admitted at the top to keep up a constant circulation, but also to prevent autumn rains falling in too great abundance on the roots and causing the plants to send out unfruitful wood; besides that, the expense of erecting a structure of this kind is only about two-thirds of that of a common brick wall, and the materials are not subject to become decayed."

NOVEMBER, 1867.

BEFORE the freshness of the impression has faded from the memory, it may be worth while to note some of the peculiar features of the weather in Guernsey during the above-named month for the purpose of comparison hereafter, more especially when the month of June again comes round.

These features are—1st, the very small amount of rainfall from the 1st to the 29th of the month; 2nd, the unnoted predominance of N.E. and S.E. winds; 3rd, the warmth of the first half of the month; and lastly, the slight indications of the presence of ozone.

The readings of the thermometer from the 1st to the 15th were, as it may be inferred, above the mean value; but on the morning of the 16th a strong gale from E.N.E. sprang up suddenly, and continued with more or less violence, though with slight variation in direction, until after midnight of the 18th. After this the temperature declined steadily, but not excessively, reducing the mean temperature of the whole month, however, to $1\frac{1}{2}^{\circ}$ below the average of years.

From the 18th to the 29th the weather, although gloomy, was pleasant and comparatively calm. Vegetation had received no check, there having been no hail showers and no frost; but on the morning of the 30th another severe gale arose, accompanied by rain to the amount of nearly 2 inches in the succeeding twenty-four hours. This was followed by very unseasonable weather during the whole of the first week of December. Compared with corresponding periods, the mean temperature of the air of these seven days was found to be considerably lower than it had been during the first week of any December for five and twenty years. The minimum thermometer, however, did not fall below 31° , indicating merely 1° of frost, and that of transient duration, when showers of sleet and melting snow were falling. This temporary frost does not seem to have inflicted much injury even on Pelargoniums and other tender plants—not so much so, indeed, as the severe gales without frost of the middle of November.

As a remark, it may be stated that the general stillness of the air, and the obscurity of sky noticed during the latter part of November, reminded many persons as well as myself of the atmospheric condition preceding a rather sharp shock of earthquake which was felt in this island on the 22nd of December, 1843. This shock, which is described somewhat in detail in the "Proceedings" of the Royal Society for the year 1844,

seems to have been associated with an eruption of Etna. No sign of vibration, however, was experienced here in November last during the period of stillness alluded to; but at that time the crater of Vesuvius is reported to have been in a state of great disturbance. Another shock of earthquake was felt in this island in April, 1853, and was concurrent with a violent eruption of Mount Hecla. These coincidences, although not, perhaps, of any importance, are curious nevertheless.—S. ELLIOTT HOSKINS.

CANADA AGAIN!

It is some time since I last sat down to pen a contribution to the columns of "our Journal," and I think I may truly be called an "occasional writer." It was "WILTSHIRE RECTOR'S" robin that stirred me to join the fraternity, and it will soon be time for master redbreast to carol again. I trust before old King Christmas comes to set foot again on my native land, and to see personally the genial Editors of our fireside companion, as also some of my brother quill-drivers.

In this part of the world we have just passed through a very extraordinary and discouraging season. Up to the middle of May we were deluged with rain, so that both agricultural and horticultural operations were quite set back. Since that time I think I may safely say that not one inch of rain has fallen until to-day (November 29th), in consequence of which our crops of all kinds have been quite a failure, with the exception of Apples: these, however, on account of the drought, have ripened so thoroughly on the trees, that we experience great difficulty in keeping them, even the later sorts now showing symptoms of immediate maturation.

The damp spring weather caused all the Peaches to cast their blossoms. Cherries were dried up by the after-drought: Pears much diminished in size, and a very light crop; Plums none. Strawberries and other small fruits were almost a total failure.

Vegetables, too, have suffered terribly, and my English varieties of the Potato are, as the Americans would say, "Small Potatoes, and few in a hill." The excessively dry weather was even too much for Maize and Tomatoes; the former in many cases being quite burned-up, and the latter a very short crop. I should say that we still find the Orange-field Tomato the earliest and best variety we have, the result of our experience thus coinciding with that of the Committee of the Royal Horticultural Society in the trial garden at Chiswick.

Little Gem Pea was, considering the season, simply grand. Advancer maintained its former excellence. These two varieties with us stand unrivalled, and by a succession of sowings Peas may be had all the season through.

The wells and streams in this vicinity have all given out, and for months the farmers for miles around have been engaged in drawing water in barrels from Lake Ontario. That person of undoubted veracity, "the oldest inhabitant," does not recollect such a season, and I sincerely hope I may never again experience another like it. Unless we should have a heavy rainfall before the ground freezes-up the result will really prove calamitous. On the Atlantic seaboard, not four hundred miles away, the summer was a wet one, and everything suffered from too much rain.—W. T. GOLDSMITH, *St. Catherine's, Ontario.*

ZONAL PELARGONIUMS AND ROSES

AT MR. WILLIAM PAUL'S NURSERIES, WALTHAM CROSS.

THE Zonal Pelargoniums, both with and without tricolor markings, seedlings as well as named varieties, which I saw at these nurseries, were especially beautiful; and the manner in which sports originate upon seedling plants, as there exemplified, interested me much.

Plants which as seedlings were perfectly green, save that a faint zone was distinguishable upon them, now and then broke forth into a variety of distinctly and beautifully marked shoots. The same plant would have on one side a shoot with foliage exactly resembling Mrs. Pollock or Lucy Grieve, and on the other something as bright as Countess of Kellie; whilst amongst all these leaves are constantly forming parti-colored ones, and others possessing many markings of great beauty. The object with such plants is to fix any sport which is likely to prove an advance in the right direction. With this view all simply green leaves are constantly pinched-off as they appear, those only being allowed to grow which by their distinct mark-

ings are likely to aid the attainment of the desired result, and eventually a shoot possessing an aggregate of the necessary brightly coloured leaves is obtained, and when obtained immediately removed and struck as a cutting. If needed, the former practice is repeated until the sport has become sufficiently fixed to take its place as a standard variety.

In the house specially devoted to these Pelargoniums, Mr. W. Paul has already two or three excellent novelties, of which, doubtless, we shall hear more in course of time. There is a very distinct and beautiful variety of the Oak-leaved Pelargonium. Perhaps I may best describe it by stating that the flower, though more striking and brighter-coloured, is not unlike that of the old Shrubland Rose variety. The plant is very much more free, dwarfer in habit, and more sweetly scented. It is named Waltham Ruby, I believe, and is suitable for pots, vases, and, indeed, for general decorative display.

In another house was a very fine stock of Ericas; hyemalis and amabilis being especially not ceable on account of their fine healthy condition. Amongst Epacris, Rubella and Ardensissima were very striking, being varieties with bright-coloured flowers. The Variegated Pampas Grass does admirably as a pot plant, and thus grown as a specimen contributes much to the general embellishment of a house containing other plants, such as Camellias and Azaleas, at this season. There is here a large stock of Camellias, home-worked, and, consequently, far superior for the cultivator than plants imported from the Continent.

The house devoted to Roses, and in which they are turned out of the pots into borders, still contained fine blooms of some of the most delicate Tea varieties. There is an especial beauty about the Rose when chilling winds tell it is passing away; and much is it to be wondered, therefore, that many more such simple structures are not raised for the purpose of securing blooms full of sweetness and beauty when all the plants without are leafless. *Maréchal Niel* and *Climbing Devonensis* are two varieties well adapted to this form of culture.—E.

KITCHEN GARDEN WALLS.

GARDEN walls serve as a fence, afford shelter, present a surface for training fruit trees upon, and accumulate heat. As a fence a wall 6 feet in height is sufficient; as regards shelter, the higher the wall is the better it effects the object sought; and as to the accumulation of heat, the higher the wall the greater is the amount of heat accumulated; whilst as a surface for training trees upon, it must follow that the higher the wall, the less necessity there will be for the annual topping and restriction of growth.

Peach trees upon a low wall do not in cold localities ripen their fruit nearly so well as upon a higher one. This is due to the surface of a high wall accumulating more of the heat from the sun, and the heat accumulated during the day is given out by the wall when the surrounding air is colder. Presuming a wall to be 6 feet in height, the sun's rays obstructed, or the cubic feet of air deprived of the solar heat, will only be one-fourth the amount of that where the wall is twice as high, or 12 feet. It is not to be understood that a wall 6 feet high will accumulate exactly one-fourth the heat that a wall 12 feet in height would do; but notwithstanding the various circumstances that would interfere with the accumulation of the heat, it is evident that a wall depriving a certain number of cubic feet of air of the sun's rays must secure to the unshaded portion a greater accumulation of heat, and give out a greater heat from the surface, than a wall depriving of the sun's rays only one-fourth that number of cubic feet of air. This will be readily understood by the annexed section of a wall (see next page), showing the effect of the sun's rays falling upon a wall of 6, 9, and 12 feet in height. The sun being at an elevation of 45°, *a, b, c*, will represent the shaded portion at the north side of a 6-foot wall; *b, d, e*, that of a 9-foot wall; and *b, f, g*, the shade caused to the north of a wall 12 feet in height.

It may be safely concluded that what holds good in respect to a south wall, will also exercise the same or an approximating influence with respect to east and west walls. High walls with east and west aspects have a greater heat accumulated in their immediate vicinity than low walls, and are better suited for the trees, besides securing to them more heat, and, consequently, a more certain ripening, and greater perfection of the fruit.

That this is not all theory, I mention a few facts coming under my own immediate observation, and which cannot but have been noticed by others. In the case of the wall on the north

side of a kitchen garden, 15 feet in height, the trees ripened their fruit a fortnight sooner than those upon the south wall, which was 10 feet in height. The wall to the north was sufficiently heated by the sun to ripen Grapes and Figs; but neither of these fruits against the south wall ripened perfectly. Peach, Nectarine, and Apriote trees against the latter did not produce nearly such good crops, the fruit did not always ripen thoroughly; and as to the flavour, it was so inferior to that from the north wall, that it was noticed at the dessert. The difference was not attributed to the difference in the height of the walls, but to the south wall's age—so old, indeed, that repointing was considered impracticable, and it was decided to take the wall down and rebuild it. The trees, mainly Peach and Nectarine, were in fine health, having entirely covered the wall, and their annual growths were being restrained, hence the wall was carried up 3 feet higher, or made 13 feet in height. The only object sought to be attained, so far as I am aware, by raising the wall, was to give a greater extent of surface for the training of the trees. No one expected any extension of crop beyond that likely to result from an extension of surface; but the crop was not only larger, finer in size and quality, but the flavour so altered for the better, that it was not known at table from which trees, whether from those against the north or south wall, the fruit had been gathered. The time, too, of ripening was marked by little difference between them. The greatest effect of the raising of the wall was that two Vines brought forth Grapes, and a Fig tree its Figs ripe and luscious.

That the difference was caused by raising the wall, is in some sort confirmed by the results of raising the east and west walls, the height of which was insufficient for the trees, these extending beyond it every year as much as 2 feet or more, all of which growth had to be cut away partially at the summer pruning, and again completely at the winter pruning. The result in this case was, that Pears that formerly on the same trees cracked and spotted, ceased to do so, and they were larger and better coloured.

I could give further illustrations of the greater certainty of crops, and of the finer quality of fruit grown by trees against high walls than against low ones; but the beneficial effects of high walls are so apparent, that any one having paid the slightest attention to the subject must have been impressed with the greater advantages afforded by them.

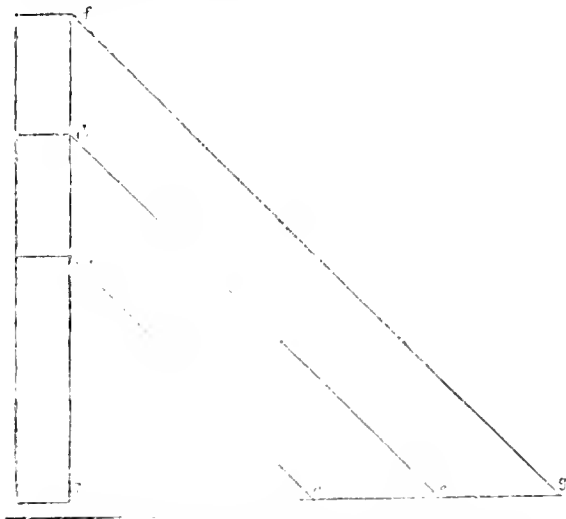
In cold localities high walls are not only desirable, but essential; for the fruit that would ripen against a low wall in a warm locality, will, in order to come to perfection, require a high wall in a cold one. In the south, walls 10 feet in height answer very well, and Peaches will, undoubtedly, ripen against walls of less height; but walls 12 feet in height are not too high for the southern parts of the kingdom, whilst for the east and west, and the least northerly counties, north and south walls of less than 10 feet would be practically of no great use. In elevated situations, and in the northern counties, walls 15 feet in height are not too high; indeed, they would be advantageous.

In disposing the walls in a garden, the wall to the north ought to be higher than all the others, except in cases where the area enclosed is extensive, then the walls may be of one uniform height. The area to be enclosed by walls being one acre, I would have a wall 15 feet in height to the north; the corresponding one to the south might be 12 feet, and the east and west walls of the same height as the south wall. Gardens of less extent than one acre may have a wall to the north of 15 feet. If the garden is less than half an acre the height to the north will not signify as to the wall shading the ground on the north side; but if the extent of ground is considerably less than half an acre, a high wall will look very unsightly. The height of the north wall in this case may be 12 or 13 feet, the south wall 10 feet or less, and the east and west walls will look well if of the mean height of the north and south walls. The north wall being 15 feet in height, the south, east, and west walls may be 12 feet in height. In the south of England they will answer if less in height; in the north they might be higher.

As to the direction of walls, that will be to some extent overruled by the ground; but where practicable (and it is so in the majority of cases), they should run north and south, east and west, and the nearer their ends point to the four cardinal points, the less waste there will be of surface. Care should be taken to give as great an extent of south wall as possible, that being secured by disposing the ground in the form of a parallelogram, the longest sides being on the north and south.

The walls that run east and west are the most valuable, as they afford one surface to the south, which is the best possible aspect, but one face must necessarily present itself to the north,

and this is of the least importance; but the superior results obtained from the southern side more than counterbalance the loss. Walls running north and south will have each a west and east aspect, and the first is the more desirable. The face of a wall looking north has a north aspect, and whatever point of the compass a wall presents its surface to at right angles, that is the aspect thereof.



As regards the materials of which walls are generally built—namely, bricks and stone, the first are the most suitable.

Bricks vary both in quality, softness, and hardness, and also in colour.

As to quality, bricks should have an even smooth surface, be of uniform thickness, length, and breadth, as if not so it is impossible to make good work with them.

With regard to hardness or softness, that depends upon the clay, and upon the burning. Some clay is so full of limestone as to cause the bricks after they are set to burst upon their becoming wet, and this produces an uneven surface, and such bricks, therefore, are not to be recommended for garden walls. Ordinary slop bricks if free from limestone are good, and being well burned and made quite hard, are excellent for a wall. If badly burned they absorb too much moisture, and besides being subject to injury from frost, very much encourage the growth of moss, and soft bricks in this respect often become very unsightly. Fire bricks make excellent garden walls, but those which are white are quite as liable to moss as soft slop bricks; indeed, well-burned slop bricks are superior to badly-burned white fire bricks. Hard-burned fire bricks, when the burning is to the extent of glazing them, are not desirable for garden walls, as they absorb heat but slowly. Some idea may be formed of the hardness of the burning of a brick by placing one in a bucket and pouring over it a pint of water. If soft it will absorb it all, and even more, whilst a hard-burned brick will not do more than absorb two-thirds of a pint of water. The latter will stand any weather, and such only should be selected. A well-burned fire brick will absorb nearly, if not quite as much water as slop bricks, but it requires twice the length of time to do it, and it retains the water absorbed a much greater length of time. Well-burned bricks, then, should be used in the construction of garden walls, but the extreme of hardness is as much to be avoided as the opposite extreme of softness. A good hard ringing brick is the proper sort.

As to colour, very dark coloured bricks, as blue fire bricks, or blue bricks of any sort, are not good, for, from their near approach to black, they become hot during sunny weather, in consequence of their absorbing the heat instead of reflecting it as white does, and trees against them are unduly excited, and rendered more susceptible of cold, and, therefore, a check is given when sunless weather intervenes. The blossoms of trees upon dark-coloured walls open earlier than against either red or white; but the fruit does not ripen any earlier. The forwarding of the blossoms is no advantage, but the contrary in our climate. White has been highly spoken of as the best colour for a wall, but that reflects more of the sun's rays than any other colour, and it, of course, absorbs less heat. Red bricks are great absorbers of heat, and of moisture also, and the colour is glaring.

Pale-coloured bricks are best, but any light-coloured bricks will prove eligible, preference being given to them over dark shades.

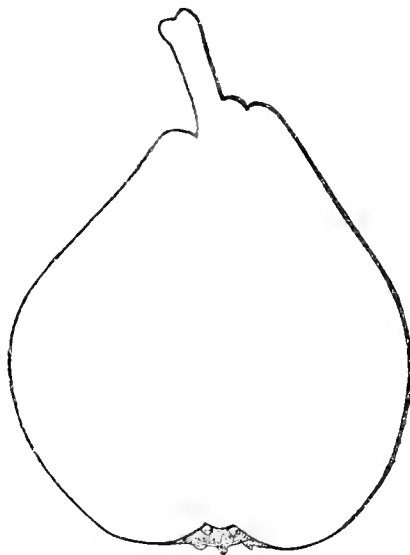
Stone is an excellent material for garden walls, but the stones should not be large, as in that case it is difficult to train the trees. The courses should be regular, and ought not to exceed 6½ inches, or two courses of bricks when set, and this will be found a convenient distance for the training of the trees. If the courses are irregular, and the stones large, to have a well-trained tree the wall must be wired longitudinally, or have a wire trellis fixed against it, which is an expense that might, by a little contrivance at the time of putting up the wall, be saved.—G. ABBEY.

(To be continued.)

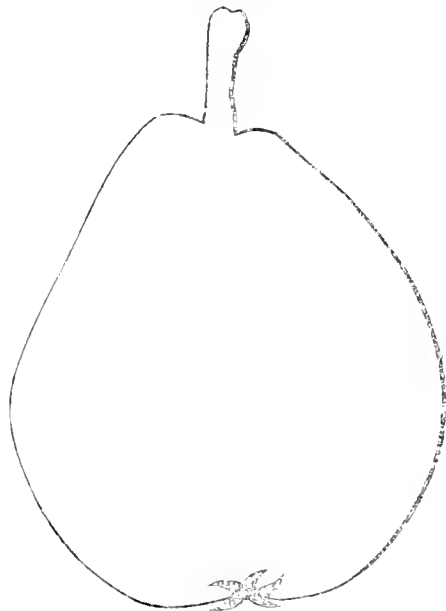
PEARS.

WE propose, for facilitating identification, to publish outline full-sized portraits of the chief varieties of our hardy fruits. We commence with the Pears. Our notes upon each variety will be very brief, and those of our readers who wish for detailed descriptions can refer to Dr. Hogg's "Fruit Manual."

1. ACHAN.—This is a truly north-country Pear, for though



1. Achan.

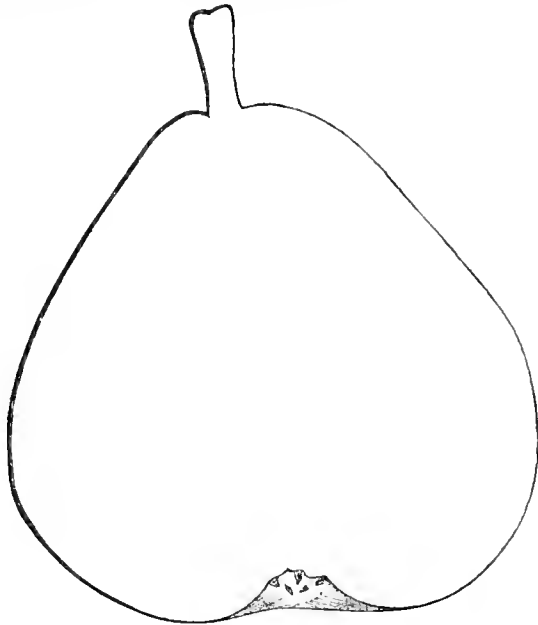


2. Adam.

delicious in Scotland, it is of no merit, though much larger, when grown in our southern counties. It is believed to be a native of Norway, and was shown under the name of the Bouchrefin, at the International Fruit Show of 1862, in a collection of Norwegian fruits. Ripe in November.—(*Fruit Manual*, p. 237.)

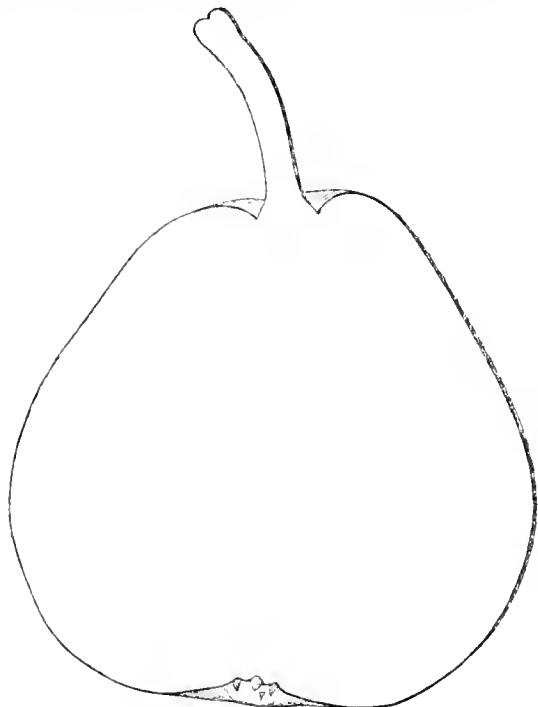
2. ADAM.—An inferior variety; speedily decaying at the core. Ripe at the end of October.—(*Fruit Manual*, p. 237.)

3. ALEXANDRE BIVERT.—A first-rate dessert fruit, raised by M. Berckmans, and named by him, in 1848, in honour of M. Alexandre Bivert, the Belgian pomologist. Ripe from December to February.—(*Fruit Manual*, p. 238.)



3. Alexandre Bivert.

4. ALEXANDRE LAMBRÉ.—Raised by M. Van Mons, and first fruited in 1844. It was named in honour of the grandfather



4. Alexandre Lambré.

of M. Bivert, an amateur arboriculturist. Fruit rarely of any merit in this country. Ripe from December to February.—(*Fruit Manual*, p. 238.)

NOTES AND GLEANINGS.

At the annual dinner of the Society of the Associated Seed Merchants of London, which recently took place at the Lenden Tavern, a handsome silver-gilt dessert service was presented to Mr. DANIEL NASH, as a testimonial of the high respect in which he is held by the Association, over which he has presided for a period of twenty-one years. The service consisted of a centre plateau and four corner pieces, each piece having emblematical figures in frosted silver, each figure mounted on a silver-gilt base, representing the four operations of agriculture—ploughing, sowing, reaping, and thrashing. The plateau bore the following inscription:—"Presented to Daniel Nash, Esq., by the members of the London Seed Trade, as a token of their esteem and appreciation of his services. December, 1867." Mr. Nash is the head of the well-known firm Minier, Nash, & Nash, which has for a period of nearly two centuries held a high place in the wholesale seed trade.

WORK FOR THE WEEK.

KITCHEN GARDEN.

ALL unoccupied ground ought to have been turned up by rough digging, trenching, or ridging, regulating these operations according to the character of the soil, and the nature of preceding and contemplated future crops. *Artichokes*, protect with any loose litter; also, *Asparagus*, *Sea-kale*, and *Rhubarb*, not that the last three will be injured by frost, but they will come in much earlier if the ground is not cooled to a low temperature. *Celery*, defend it from frost. It will keep good for a considerable time if taken up with balls, placed upright in rows in a shed, and clean dry straw put between the rows so that the heads may not touch each other. *Cauliflowers*, keep a sharp look-out after the plants in frames or under hand-lights, and those fit for use, as well as *Endive*, *Lettuces*, and *Radishes* in cold frames or turf pits, protecting those in the latter with straw or reed covers neatly made, or with hurdles thatched with straw or spruce branches. *Peas*, if not already done seize the earliest opportunity of mild weather to sow the first crop. *Ringleader*, *Dillistone's Prolific*, or *Dickson's First and Best* are suitable varieties. *Broad Beans*, sow *Early Mazagan*, or *Early Longpod*, choosing for the main crop such established early varieties, and only small quantities of these sorts the superiority of which is not sufficiently tested.

FRUIT GARDEN.

As to pruning, nailing, and planting, it is always advisable to be as forward as possible with these operations before Christmas. Protect newly planted trees with mulching. The wood of Peach trees will not be over-well ripened this season in unfavourable situations, and more especially in the case of these trees that suffered greatly from frost last January and February. The late frost, by checking vegetation, may help to ward-off such another disaster. All the young shoots of Peach and Apricot trees should have been unnailed some time ago. In consequence of being freely exposed on all sides the shoots would be better hardened, and from not being contiguous to the wall they would not be so easily excited, nor in so much danger of having their sap-vessels burst by severe frosts. In addition to this, the stems might be bound round, not over-closely, with hard-twisted straw bands, and a little long litter thrown over the border to the width of 4 or 5 feet. This is an excellent opportunity for moving soil, turning composts, and wheeling manure. Do not forget a little of the latter as a mulching or top-dressing to Strawberry-beds, if very superior fruit are desired next season. Standard Apple trees, if not already attended to, may now be pruned, taking care to cut out all cross branches. Gooseberries and Currants if not previously pruned may now be gone over, so as to allow the ground to be dug amongst them.

FLOWER GARDEN.

After the late frost and snow but little can be done here at present except where alterations are going on, and then the trenching of ground for planting may be proceeded with. Beds containing autumn-sown annuals would be the better of a few branches of evergreens stuck into them to shade the plants

from bright sunshine after frost, and to protect them from drying winds.

GREENHOUSE AND CONSERVATORY.

Of all plant houses the conservatory requires the smallest quantity of air in winter. In order to keep down dust, so injurious to plants in winter, the paths should not be swept when they are quite dry. Gardeners are often compelled to make use of the engine, even in winter, to cleanse the leaves. Very little water will do here now, and that should be 9° or 10° warmer than the general temperature of the house, which may be about 50°. The temperature of the greenhouse should not be raised much above 40° now. The watering ought to be finished early in the day, and the plants should be constantly looked-over to keep them free from dead leaves, insects, or mildew in the pots.

STOVE.

The temperature of this house should not exceed 60° by fire heat, and a fall of 10° may be allowed at night in very cold weather. Although all plants now at rest should be kept comparatively dry, they will require to be looked-over daily to see that they do not suffer from want of water, particularly those nearest the pipes or flues. Orchids may be potted, tied-up to logs, or fitted into wire baskets at any time when little can be done in the open air, but they need not be watered or induced to grow for a long time. This is a good time to prune and regulate the heads of the specimen plants. Many, such as *Justicias*, *Poinsettias*, *Apelandras*, &c., had better now be cut-down altogether and kept dry for a few weeks. If you have a good stock of *Euphorbia jacquiniellora*, cut down some plants of it also. This will enable them to make an earlier growth, and come into flower three weeks sooner next winter. This treatment equally applies to *Justicia speciosa*, and *Eranthemum pulchellum*, and, no doubt, to all our winter-flowering plants. Look over *Gloxinias* and *Gesneras* on the dry shelves, and start a few of each into growth, to produce a succession of flowers.

FORCING PIT.

It is only necessary to remark, that where forced flowers are in great request two divisions are necessary; one for such hardy plants as do not succeed in a high temperature, the other, with means for bottom heat, for *Gardenias* and other stove plants. Almost all plants, however, in forcing are benefited by a mild bottom heat.

PITS AND FRAMES.

Of all plant structures these have become of late years the most important. Everything, from the finest Heath to the humblest Alpine, finds a ready asylum in them during the winter. They require the utmost attention at the present time; a slimy green pot, a speck of mouldiness on the surface, or even a decayed leaf, if not instantly removed, may be the ruin of the most favourite plant. Very little water will be required here for some time. See that ample covering is ready for use during the long cold nights. A multitude of half-hardy plants may be kept in these without any means of artificial heating, but at the outset, notwithstanding all care, some of them may be lost. Deaths, however, will occur in the best plant houses. The young stock of plants in these structures is in a growing state, and, therefore, will require to be securely guarded against frost, but give them all the air and light possible on fine days, and keep them from mildew and moisture. Where *Hydrangeas* are required to turn into beds in the flower garden in April and May, they must now be put into the forcing house.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Much that was intended to be done remains still undone, and in most departments we have chiefly confined ourselves to keeping all going on in regular routine, aiming rather at having all right than at doing much fresh work. As mind and body become more settled we shall gain all the advantages ere long of a little relaxation. After much observation and personal experience we have come to the conclusion that the benefit from cessation from or change in labour—in other words, having so many hours or days as a holiday, is not so much seen at the time as afterwards. Even looked at in the lowest sense in which we can well regard it, the amount of labour to be obtained from mere physical power, less or more regulated by mind, the amount of the work performed will at first be rather less after a holiday than before; but in a few days the effects of the change and the relaxation begin to appear, and then,

provided these holidays do not come too often, we have no doubt that they tell even beneficially on the side of the employer of labour, both as respects the quantity and the quality of the work done. A day or two now and then, in the way of cessation from usual labour, is anything but lost time, as fresh energy and a fresh stimulus to exertion are thus supplied.

Vegetables, forced and otherwise, received much the same attention as has been detailed in previous weeks' notices. We shall just refer to a few matters now demanding attention.

Collecting Tree Leaves.—It is best, if possible, to collect these when rather dry, as then they may remain a long time in a heap, will heat and waste but little, and can always be made to ferment and heat sweetly by giving them a little water. In many places, however, they must be collected in any condition, and scarcely at all until the game-shooting season is over; and if for present or spring use the wet condition of the leaves is of less consequence, only when placed in a heap they will soon rot. They might, therefore, as well be giving out their heat as not for the forwarding of early vegetables where glass or other protection can be given, such as for Potatoes, Radishes, Lettuces, Carrots, Turnips, Asparagus, Rhubarb, and Sea-kale, which last may be had in any place where a heat of 60°, or more, and darkness, can be secured. Leaves when raked-up damp will soon ferment, and may, therefore, be made into beds for such purposes at once.

Methods.—When a greater heat is required, as for Cucumbers, &c., it is not easy to obtain enough of bottom heat and top heat at this season from tree leaves alone, unless, indeed, the bed is very large, and, therefore, it is advisable to have at least one-half of fermented stable manure along with the leaves. Those who are particular in sweetening such stable manure thoroughly before using it, should turn it several times in the course of three weeks, turning the sides into the centre and the top to the bottom, and watering any that appears dry, until all becomes of a darkish appearance, and so sweet that the moisture that rises from it, when condensed against an iron plate, or a square of glass, shall be not yellow-tinged, but as clear as a dewdrop. This sweetening will be hastened by mixing the dung with damp tree leaves; but where economy in material is an object, we would not mix until the last turning, as, if done at first with fresh dung, the leaves will be considerably wasted before the dung is sweetened. For lastly-made and very lasting, and therefore economical beds, we prefer to have the dung as much heated as to be half sweetened, and then cover that with a foot of fresh sweet tree leaves, through which no deleterious steam will pass. This plan saves material and time, and the beds when thus well made last and keep a regular heat for a long time, and if made large enough need little or nothing in the way of linings all the spring and summer. When we have a range of frames thus to supply with fermenting material, and can only manage a two or a three-light box at a time, we generally make the first bed in the centre, and then the beds on each side help to throw fresh energy into the heating powers of the first. By means of a few drain tiles set upright in the beds we can always keep the lower stratum slowly fermenting and decomposing, by adding air and moisture to it as wanted. Where hot-water pits or houses exist in plenty there will be less need for these dung beds; but they are of great benefit to the garden when the summer crops are all gone, and they can be taken to the ground as valuable dressings. Many have found out that it is possible to have too much of improved modes of heating when little else can be had for the kitchen garden, except the remains of the vegetables grown in it, and such will not long be sufficient in supplying a closely cropped garden.

Mushroom-bed Dung.—The remains of Mushroom beds are first-rate dressings for almost anything, and especially for flower beds; the material is generally so light, and the greater part of the strength is gone. We have for many years found it an excellent top-dressing for Kidney Beans in pots, and at one time we used it largely for Cucumbers in pots and boxes as thin top-dressings, putting on another thin dressing as the roots came through the last. It is also very useful for top-dressing orchard-house trees in pots during the summer. But for the corn growing, we would not mind fresh droppings for this purpose if there were a little of this decayed used-up Mushroom dung next the surface of the soil. For all these purposes, however, we like such wasted Mushroom dung to be rather thinly spread out of doors at first, before it is thrown into a heap to keep it dry, in order that cold and damp weather may destroy what active spawn may be left.

Mushroom spawn is almost as bad as any other fungus when

it takes possession of a place where it is not wanted. We have seen borders for fruit trees much injured by Mushroom spawn, and we have found plants and trees much injured until the spawn was all destroyed by strong fresh lime-watering. Hardly any of the Mushroom tribe will succeed or grow when treated with quicklime under any circumstances.

Preparing for Mushroom Beds.—In summer there is no difficulty in doing this, but there is more trouble in obtaining materials for a bed in winter. We have already several times stated how we have used almost every possible fermenting material for such beds. Provided we could obtain a few inches of good horse droppings, or good, sweet, hotbed dung for the surface, we have had many fine beds made with tree leaves, with a few inches of such rich dressings on the surface; but for all shallow beds on platforms, shelves, or even in moveable boxes and large pots, we prefer horse droppings with about a third of short dry litter, and from a sixth to an eighth of dry fibrous loam mixed with it. The nearer the droppings are being sufficiently dried—that is, to be neither wet nor dry, without heating much, the greater will be the nutritive qualities left for the support of the Mushrooms; and it is comparatively easy to secure this dryness without much heating in the summer months. There are no means in open sheds to dry such materials now without throwing them into a heap to ferment. They will soon dry sufficiently if the droppings were collected at the stable; but when they must be shaken-out from dung that has lain out of doors, they will often be so wet as to rot when heated, instead of drying, and in such a case we have cut dry straw and mixed with the materials to great advantage. When thus piled up in a heap from a week to a fortnight, the inside of the heap will have a dry whitish aspect; and though we have lost much of the nutritive qualities, we are forced to make that sacrifice to secure the amount of dryness which will secure a long and continuous heat from the materials when firmly beaten together in a bed. If damper, the heat would be apt to be too strong and not lasting, and the spawn dislikes damp ground to run in. When our beds have been damper than we liked them, we have had good crops by inserting each piece of spawn in a good handful of short dryish litter before fixing it in the bed. The general dampness of the bed then acted much the same as a casing of damp cow dung over a dryish bed—a plan, however, not to be adopted by those who dislike very thick succulent Mushrooms.

Draining.—No better time and weather could be found for this work, and in gardens it can rarely be effected except in the dull days of winter. It is hardly worth while draining if the drains cannot be made from 3 to 4 feet deep. We have seen much draining done with the common garden spades; but wherever a considerable amount of work is to be done, even a week or two of such work, it will always be money saved to procure a set or two of draining tools, so that the drain may be easily made like the letter V, and the round drain tile easily deposited in the acute angle at the base. If the cuttings of Blackthorn, &c., can be had, a good layer of these above the tiles will greatly assist them. We have helped to examine such drains filled for a foot in depth with Thorns alone, that worked well after being deposited for a score of years; and even then, except close to the outlet, they were remarkably fresh. It is always well, however, to have tiles if to be had.

For mere surface water the drains may be much shallower, but they will exercise but little influence in the culture of the soil. We have known some cases, however, in which all the work of draining was next to labour thrown away; and therefore it would be advisable to make sure if the ground really needed draining. We recollect of a case where the soil was a rather stiff loam, resting about 2 feet from the surface on what was considered to be a stiff clay—just such a soil as was supposed would be much improved by draining. A good outfall was obtained in the neighbourhood of a running brook, and the drains were made from 12 to 18 inches deep in the clay; but the wonder was that with the fall, &c., scarcely any water ran out of the drains. In fact, the draining was found almost useless work. Holes were made 3, 4, and 5 feet deep, and yet the latter seldom retained water long even in the winter months. The truth came out that the supposed clay was plentifully commingled with marl, as proved by the action of acids, and the extra moisture escaped easily by the veins of clayey marl. Making a few holes involves no great trouble, and may well be done before a great drainage work is commenced. If the subsoil is so open that the water passes freely, we may rest assured that such moisture rising again in the shape of vapour will rather be relished by the roots of plants in summer. If water

will not stand at a good depth, we can hardly have the surface soil too moist, unless there is some intercepting material between the surface and the subsoil.

Digging, Trenching, and Ridging have not with us received, as yet, the attention they ought to have had, but we so far please ourselves with the thought, that the surface of the ground has been pretty well frozen, and we rather like it to be so, and thawed again, before we turn the surface down to the bottom of the trench in ridging. Nevertheless, we would have liked to have had more soil ridged-up.

Frosty mornings furnished good opportunities for wheeling manure, rubbish heaps, burnt earth, weeds, &c. After breaking the dung fine, thrown over Asparagus rows, we gave a good dressing from a heap formed chiefly of burnt prunings, weeds, and edging-parings, which will only be less beneficial than a sprinkling of salt, whilst it will secure to our stiff soil a lighter surface.

Sea-kale and Rhubarb.—For the main crops out of doors we prefer planting in well-trenched, well-aired soil, in spring, just after the heads or buds begin to move, using young plants for Sea-kale, and either young plants or dividing the roots for Rhubarb. Large stools are benefited in their produce when divided into two or three pieces; but as spring generally brings enough of work with it, such work may also be done now with advantage, and so may Asparagus be planted in a mild day, when there is no danger of the tender fibres being dried-up or injured. The best time to transplant this vegetable is when the shoots have grown some 3 inches in length; then scarcely a single plant fails, whilst what we used to plant in the winter did not grow quite so regularly.

Horseradish.—This we consider to be always best, and fit for use right up to the core, when it is transplanted every few years, a few rows at a time. The worst of it is, the difficulty of eradicating it from a piece of ground where it has once been planted. The most secure mode is to pick up every bit as it appears, and especially never to allow a leaf to grow. Few plants will long retain healthy roots if no leaves be allowed to grow. Constant cutting will beat the Nettle, the Thistle, and even the more dread white-rooted Convolvulus. In cold weather the easily-grown Horseradish might be more used than it is. It would to many a working man be little less serviceable than the once famed "curry powder."

FRUIT GARDEN.

Here the weather and other circumstances have prevented us doing much out of doors; and in-doors the chief work has been attending to the fruit room, taking out all specked fruit, looking over Grapes, which have kept well, but are becoming thin, and pruning and cleaning fruit trees in vinerias and orchard houses. We had intended having some work with

Vine Borders, but as yet, have been unable to do anything. Many questions have been put to us since we detailed the simple plan of border-making, or rather no border-making, at Messrs. Lane's, of Berkhamstead. Before going to great expense in draining, &c., it would be well to ascertain whether there would be standing water; and if the natural soil is good, most likely the addition of some lime rubbish, and some boiled broken bones will be all that is necessary to secure fine Grapes. We should like to have fresh fibrous turf and bones, and use the means to keep the soil open, as it all soon becomes close here if left to itself. In all such cases, especially for early work, much depends on having canvas or boards fixed tile or slate fashion, to keep the late autumn and winter rains off—a practice which has done wonders in many cases, though we have seldom been able to resort to it ourselves, and, therefore, have had to be content with makeshifts.

ORNAMENTAL DEPARTMENT.

When the day was at all open, proceeded with moving trees and shrubs, taking care to place them in mellow soil before the roots were injured by frost, or the soil caked. Cleaned and rolled pleasure grounds, forwarded bulbs and shrubs, including Roses, for blooming. Put a lot of Cinerarias into a drier place to open their blooms more freely. Shifted Pelargoniums and other plants, and potted some stove plants in small pots. Damped the floor and stage of the cool house in frosty days, but kept the tops of the plants, Ferns, Mosses, &c., dry, and in cold days preferred a safe low temperature to making fires, to give much cold air. Gave as little water to all greenhouse plants as possible, so as to keep them healthy; but took care that Camellias, Cinerarias, Primulas, &c., did not suffer from dryness. Epacris stand a much closer and moister atmosphere than the Erica tribe, and these last must have more air and less heat.—R. F.

COVENT GARDEN MARKET.—JANUARY 1.

Roots articles of produce have made a slight advance; but all the rest remain nearly the same. Pears are now becoming rather scarce, and comprise Glou Morqean, Ne Plus Meuris, and Crasanne. Good dessert Apples are in better request. The Potato trade is stationary; some fine samples of Regents have come to hand during the past week.

FRUIT.

	p. d.	s. d.		p. d.	s. d.
Apples ½ sieve	2	6 to 4	0	Melons each	2 0 to 3 0
Apricots doz.	0	0	0	Nectarines doz.	0 0 0
Cherries lb.	0	0	0	Oranges 100	5 0 10 0
Chestnuts bush.	8	0	14	Peaches doz.	0 0 0
Currents ½ sieve	0	0	0	Pears (dessert) .. doz.	2 0 4 0
Black do.	0	0	0	Pine Apples lb.	4 0 6 0
Figs doz.	0	0	0	Plums ½ sieve	0 0 0
Fliberts lb.	1	0	0	Quinces doz.	2 0 5 0
Cobs lb.	1	0	0	Raspberries lb.	0 0 0
Gooseberries quart	0	0	0	Strawberries lb.	0 0 0
Grapes, Hothouse, .. lb.	3	0	6	Walnuts bush.	10 0 14 0
Lemons 100	8	0	12	do. per 100	1 0 1 6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.		
Artichokes doz.	0	0	0	Leeks bunch	0	3	0
Beans, Kidney 100	0	0	3	Lettuce per acre	1	0	1
Beet, Red doz.	2	0	8	Mushrooms pottle	2	0	3
Broccoli bundle	0	6	1	Must. & Cress, punnet	0	2	0
Brus. Sprouts ½ sieve	2	0	2	Onions... per bushel	3	0	5
Cabbage doz.	1	4	2	Paraleys per sieve	4	0	5
Capsicums 100	0	0	0	Paranips doz.	0	9	1
Carrots bunch	0	6	0	Potatoes bushel	4	6	5
Cauliflower doz.	3	0	6	Kidney do.	4	0	6
Celery bundle	1	6	2	Radishes doz. bunches	1	0	1
Cucumbers each	1	0	2	Rhubarb bundle	0	9	1
pickling doz.	0	0	0	Savory doz.	1	0	2
Endive doz.	1	0	0	Sea-kale basket	0	0	3
Fennel bunch	0	3	0	Shallots lb.	0	8	0
Garlic lb.	0	8	0	Spinach bushel	4	0	5
Herbs bunch	0	8	0	Tomatoes... per doz.	0	0	0
Horseradish .. bundle	2	6	4	Turnips bunch	0	4	0

TRADE CATALOGUES RECEIVED.

James Veitch & Sons, Royal Exotic Nursery, King's Road Chelsea, London, S.W.—*Catalogue of Hardy Trees, Shrubs Coniferae, &c.—Catalogue of Garden and Flower Seeds.—List of Gladioli.*

TO CORRESPONDENTS.

. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

MAUD.—Let us know where you wish us to send. We reciprocate all good wishes.

PEAT CHARCOAL.—"A Subscriber" wishes to know how this can be made, so that he can use it in Hay's stove. We think that coke might be burnt in it if a chimney tube were attached to the stove.

FOWLER'S INSECTICIDE (S.).—It is advertised in our number published on the 5th of December.

HULLETT AGAIN.—"The writer of this is one of those who had the ill luck [indiscretion?] last spring of purchasing some of Mr. Hullett's Chinese Sugar Grass seed to the amount of 2s. Not a single blade came up. Has any one heard of any coming up, or of a single success?"—H. C. S. G.

BURNING SULPHUR TO DESTROY INSECTS (Q. R.).—It is quite true that to one correspondent we advised this and to another deprecated the practice; but each reply was justified by the circumstances. In the one the wood and buds of the Vines were well ripened and quite dormant; in the other the shoots of the fruit trees were not well ripened. In the latter case we objected to the use of burning sulphur.

FLUELESS STOVES (J. B.).—No stove without a flue or chimney can be used among plants. This has been proved frequently. Our correspondent wishes to know if the Royal Vineyard Grape has been found to set its berries well.

WINDOW GARDENING (Easton Park).—If you enclose ten postage stamps with your address, and order "Window Gardening for the Many," it shall be sent to you post free from our office.

PRUNING ROSES (J. Green, Guernsey).—"Three feet is closer than I should have cut Anna Alexieff with 9-foot-long shoots. Supposing the plant to have five such shoots, I should have cut the five shoots to 6 feet, 5 feet, 4 feet, 3 feet, and 2 feet. It is not good to cut such strong shoots

of strong-growing kinds very short; it only promotes strong and blind growth. If the whole wood of any plant is bad, it is best to cut it down and look out for better growths, otherwise I never cut down Roses on the Manetti. Roses on the Briar require to be pruned more or less closely, according to their rate of growth, annually. The Manetti stock supplies such tides of sap that it requires a good volume of wood ready to take it off.—W. F. RADCLIFFE."

PRUNING HYBRID PERPETUAL ROSES (C. O.).—"You do not say whether the Roses are on a Briar, on a Manetti stock, or on their own roots. If they are on a Briar cut out all useless wood at once, and in March, when the weather is mild, the main stems may be cut to two, three, or four eyes, according to circumstances. Roses on the Manetti or on their own roots may be thinned-out now, and cut at once, or in March; or they may be allowed to form all their buds, and be thinned-out, and some of the tree be cut back in May. All my ground plants are skeletonised, and will want but little more cutting. I thin-out my bushes after blooming is over to let in sun and air, to harden the bark, and to help to mature the wood.—W. F. RADCLIFFE."

ROSES FOR NORTH FRONT OF A HOUSE (C. W. M.).—"The aspect being north, the Roses must be hardy, grow quickly, and bloom freely. The following would do well, I should think:—*Crimson*: Général Jacqueminot, Madame Louise Carique. *Yellow*: Mademoiselle Aristide, called also Madame Schultz, a very strong grower, not very double, but the hardest yellow known; and *Gloire de Dijon*. *Rose-coloured*: Anna Alexieff and Baronne Prevost. *Cerise*: Jules Margottin. *Dark Purple*: *Crimson*: Duc de Cazes.—W. F. RADCLIFFE."

ROSES (Ormskirk).—"I, Panachée d'Orléans is a pretty, semi-double, striped rose. 2, Ardoise de Lyon, slaty crimson; a hard opener, worthless. 3, Madame Standish, a pretty, small, pale pink Rose. 4, Name not readable; if intended for Madame Desprez, it is lilac rose. 5, Madame de Trotter is cherry rose, fine colour, but given to green eyes; the plant is a strong grower, and never blooms a second time. Cut it down, and had some favourite on the new stems. My finest Lord Macaulay is on stems of this variety. 6, Frederick II. is a fine crimson, purple pole Rose, Hybrid Bourne, semi-double. 7, Baronne Halle, deep red, much given to mildew, for which cause I gave up it and *Géant des Batailles*. It is the best of the lot, and very fine. 8, François Arago, crimson purple; good. 9, Salvator Rosa, red. 10, Richard Smith, semi-double, blooms in large corymbs; a good and continuous bloomer, useful to cut up for bouquets; it is crimson purple. As the Roses are in your garden, bloom them all the next season, and you will see which will please you and which should be discarded. 7 and 8 are all that are retained in select catalogues. As we have no striped Hybrid Perpetuals I should select I. Pavillon de Pregny, a new Rose, is a very pretty, variegated, abundant-blooming kind, adapted for garden ornamentation and bouquet purposes.—W. F. RADCLIFFE."

NOTICE TO LEAVE (Sittingbourne).—You ask, "What notice in general should be taken by and given to a gardener living on the place and paid weekly, without any previous agreement as to notice?" "Living on the place" does not give a clear idea. If living in the house, though paid weekly, a month's notice is generally given. If you live in a cottage on the estate, and not connected with the establishment, the fact of your being paid weekly would make you, we presume, a weekly servant, and, we think, you could not claim more than a week's notice, as nothing was said on the subject at the time of agreement, otherwise it is usual in the case of gardeners to give and receive a month's notice; but we have known cases in which that notice was not given. There are rules of courtesy, consideration, and kindness more binding than custom, and they who break these rules will generally suffer for it. The gardener will be wise not to err in this respect, however great the provocation. There are cases, also, where staying a month would be little better than a punishment.

BEDDING ANNUALS (A Cottager).—You will find a full descriptive list in our number 396, published on the 7th of last February.

YOUNG VINES BLEEDING (W. F.).—The bleeding now when cut is owing to the free growth, the good border, the action of the roots still, and consequently the sap still in motion and no outlet by leaves. Allow the house to be cooled-down with a little frost, the border also to be exposed, and in a few weeks you may prune without any risk of bleeding. If it troubles you even then, use Thomson's styptic. We once saw a viney, the Vines bleeding when cut at Christmas, and the leaves all off a month previously; but in this case the Vine borders had been made late in spring, and so much grassy sods and bones had been used, that there was a considerable heat in the border in November.

VINES FOR FORCING (Rusticus).—You require fourteen, and we recommend you to procure four Muscat of Alexandria, three Alicante, three West's St. Peter's, two Muscat Hamburg grafted on Black Hamburg, two Lady Downe's. These are recommended on the supposition that you want to force Grapes for a late crop. If you require them for early forcing you cannot do better than have four Black Hamburg, two Black Prince, three Royal Muscadine, two Salomon's Frontignan, one Mrs. Pince's Black Muscat, one Black Frontignan, one Grizzly Frontignan.

DISSOLVING BONES (T. M. N.).—Put a layer, 1 inch deep, of broken bones, and sprinkle caustic potash over them and among them; the potash can be mixed with the bones as they are put into the vessel where they are to be dissolved. Caustic potash is not soda. It can be usually bought at druggists' or drysalers'. It is rather dearer than washing soda.

HEATING BY STOVE FLUES (A Bucks Bee-keeper).—Refer to some of our back numbers, in which are answers to correspondents as to heating by a stove's flues. We are not sure of the size of your small house; but we have kept the frost of this season as yet out of an orchard house, 75 feet long, by means of an iron stove. Now, first, you will not succeed by placing your iron stove either inside your house or outside the house and taking a flue from it, either through the house or returning from it; but you may heat the house well by such a flue and a common furnace placed outside the house, and in such a manner that the bars of the furnace are 15 inches at least lower than the bottom of your flue. If, for your small house, you merely want to keep out frost, then your iron stove set in the house will answer admirably, provided you have a horizontal pipe from it not more than from 18 to 24 inches long, and then an upright pipe passing through the glass roof, which is most easily managed by placing a zinc square with a hole in it instead of a glass one; or your stove might stand against the back wall, and the pipe go through the wall. There need be no trouble with smoke, dust, &c., if the directions

given in the answers referred to are attended to. The top of the stove being flat will enable you to set a pan of water on it when much heat is wanted. The draught must be regulated by the asphit door.

UTILISING GARDEN FRAMES (Ch.).—Your cheapest way to make your six lights of frames more useful, would be to make a pit, say from 18 inches to 24 inches deep all round, and of a width to suit your frames standing close on the walls, and the best way to heat such a place would be by a 9-inch flue passing through it in front and along the ends, or a 6-inch flue going round it and coming to the chimney. By such a mode, or without the frames, and having a pit 30 feet long, and the back wall of the pit, if 6 feet wide, 18 inches higher than the front, and heated the same way, you could keep and grow many things, more especially if you had a movable stage inside to place the pots at a greater or less distance from the glass. You could heat such a place well with a small iron stove, but then you could not force so well. With one or more divisions you could give each its suitable temperature, and at an early period you could use fermenting material as in a hotbed. Of course hot water, by Musset's plan or otherwise, would be best; but do as you will, it is always expensive for small places unless the simplest modes are used.

WINTER TREATMENT OF VIOLA CORNUTA (Fred.).—It would be well to remove any long straggling stems now, and to give a mulching of half-rotten leaves, which will act as a protection. Place it round but not over the plants, and in spring point it in with a fork, removing at the same time any decayed stems or irregular growths, so as to give the plants a neat appearance. They will bloom finely in spring, and much earlier than young plants. If you require more stock you may take up the old plants in spring and divide, or take off the rooted offsets, which last will give you a later bloom if planted in good rich soil and well watered in dry weather.

PANSIES IN WINTER (Idem).—The old long stems which have flowered ought to have been cut off early in autumn, but you may do it now, and give a top-dressing of rich compost, say turfy loam and rotten manure in equal parts, the ground having previously been cleared of weeds and the surface of the beds stirred, but not deeply, with a fork between the plants. The top-dressing should be put between the plants and close to them, and it may be an inch thick.

CERASTIUM TMENTOSUM EDGINGS (Idem).—Last year's edgings will do for this if they are not old; but if old it would be preferable to take them up in March and replant. If you leave the old edgings, reduce them in spring to the required width, and cut in the shoots closely, so that fresh shoots may be produced. On the freshness of these the beauty of the edgings in a great measure depends.

SHRUBS FOR CHURCHYARD DEPAUPERED BY SHEEP (An Old Subscriber).—You may plant the common and variegated Hollies largely, Evergreen Oak, and standard Portugal Laurel, which we have seen in places depaupered by sheep; but the shrubs were of good size when planted, and had stems high enough to place the foliage beyond the reach of the sheep. Most of the Conifers would succeed, providing they were of good size and the upper part beyond the reach of the sheep.

COMPOST FOR CYCAS REVOLUTA AND LATANIA BORBONICA (A. B. J.).—They succeed in a compost of two-thirds turfy loam, that from rotten turves being best, and one-third turfy peat, adding sand liberally. The compost should be used rough, merely chopping it with a spade, or breaking it with the hand, which is best. Good drainage should be given. Good peat can be obtained in so many districts, that we are unable to say from whence the best comes. Consult a nurseryman or gardener in your neighbourhood who is successful in plant culture.

COVERING VINE BORDER WITH GLASS (Beginner).—Instead of manuring the border heavily in autumn, we would, as the roots are not to be found, or with difficulty, remove the soil from the border to as great a depth as practicable without disturbing them, and take it away. We would then point-over the border, but without disturbing or injuring the roots, and give a dressing of pieces of sandstone, from the size of a walnut up to that of the clenched fist, scattering them over the surface, but not so as to cover it completely. Next we would give a scattering of dry bruised bones, equal in quantity to the sandstone, a like quantity of lump charcoal and of mortar from an old building, placing them in the order as named. Upon the charcoal you may give a sprinkling of calcined oyster shells, and upon the lime rubbish place a layer of horse droppings an inch thick, covering the whole to the depth of 6 inches with turves cut 2 inches thick from an old pasture, where the soil is a rather

light loam; the turf cut into pieces about 6 inches square. We would do this now, having first convinced ourselves that the border is well drained, and particularly that there is no stagnant water lodging about the roots at the bottom of the border. A fortnight before applying fire heat, or previous to the Vines commencing growth, cover the border with from 18 inches to 2 feet of hot dung, such as is used for hotbeds, so as to produce a gentle heat. This may remain on until its heat is gone and the weather has become warm, when it may be removed. In the meantime we would prepare the lights with which to cover the border, and we would put them on as soon as the Grapes were ripe, or, if very wet weather, when the Grapes were colouring. Leaving it on all winter you might winter bedding plants under the glass, providing you could keep frost from them; but if they are kept-in late in spring the drip in watering will be injurious to the Vines as the glass covering would in other respects be beneficial. We would not employ it for any such purpose as the growing of Cucumbers or Melons, but, on the contrary, take it away entirely after May, and during that month and April, or even March, in mild weather, remove the lights whenever it rained, so that the border might have the benefit, replacing them after the border had become sufficiently moistened; or, failing rain, the border would require to be watered, especially if the lights were kept on constantly. At the end of May remove them altogether, unless you have particular reasons for keeping them on, as the Grapes ripening, or cold heavy rains occurring about that time, which it will be well to throw off. We would not put them on again until the crop was colouring, and then we would keep them on continuously until we wished the border to become moistened on the Vines again starting into growth. In place of heavy manurings in autumn a top-dressing of turves one-third, horse or sheep droppings one-third, and one-third half-inch bones, charcoal, and calcined oyster shells in equal quantities, would be preferable; a covering 2 inches thick would be ample. Glass-covered borders are good when the covering is movable; but we think them them quite as bad as exposed borders if they are used for plants in winter, and Cucumbers or Melons in summer.

GRAFTING PERESKIA ACULATA (A. B.).—You could not have a better stock on which to graft Epiphyllum truncatum than the Pereskia—indeed, it is the best of stocks. Take off the head of the Pereskia at the required height, and make a slanting cut upwards, and about an inch long, at the top of the stock and on one side. You will cut off a stem or branch from the Epiphyllum to be grafted upon the Pereskia, and pare one side at the lower end in a slanting direction downwards, making it quite thin at the bottom, and so that the cut part shall fit that of the stock exactly. About half way down the slanting cut in the stock make a cut downwards, and about half an inch long, and make a corresponding one upwards in the graft, which will make a sort of slit or tongue in each; that of the graft should be introduced into the one in the stock, and pushed downwards, so that the cut portions of both may fit correctly. The graft may be fastened or bound to the stock with a strip of bast matting, still keeping it in its place and tying tolerably tight, but not very much so. The junction may then be covered with moss, binding it on with matting. It is not necessary to cover with clay. The plant may be placed in a house where there is a gentle heat, and graft and stock alike sprinkled with water twice a day by means of a fine-roset syringe. When the graft begins to grow the matting should be loosened. The best time to graft is in spring, or a little before the Epiphyllum begins to grow. The Ferns sent us were not numbered, so that we cannot refer to them.

GLADIOLUS BULBS (P. I. N.).—We should have preferred to have kept the bulbs on a shelf until they had become dry and parted from their stems, and then have stored them away in dry sand on shelves. The ground where they are to be planted should be well and deeply dug, leaving it rough for the winter, and working in a liberal dressing of manure. The bulbs should be kept out of the reach of frost.

NAMES OF FRUITS (H. A. London).—The Apple from Canada is Pomme grise. (H. H. S.).—No. 1 is Crasanne, a melting Pear when proper, ripened; but in some seasons and in cold situations it does not ripen and then it may be used for stewing. No. 2 is Black Worcester, one of the best stewing Pears. (W. Smith).—1, Beurre Diez; 2, Glout Morceau; 3, Belle de Noel; 4, Huthouse; 5, Winter Pearmain; 6, Crasanne; 7, Marie Louise; 8, No Plus Menris; 11, Beurre Dier from a wall; 12, Vicar of Winkfield. (A. H. G., Faversham).—Your Pear is Beurre de Lance.

NAMES OF PLANTS (J. M.).—We cannot name plants from leaves only.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Nine Days ending December 31st.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Mon... 23	30.193	30.189	59	25	43	43	S.E.	.09	Heavy fog, hoar frost; slight haze; overcast.
Tues... 24	30.065	29.990	53	25	43	43	S.E.	.00	Overcast and mild; clear and fine; hazy at night.
Wed... 25	30.200	30.090	41	30	43	43	S.E.	.00	Overcast, hoar frost; fine; overcast, slight haze.
Thurs... 26	30.210	30.041	53	29	43	42	N.W.	.01	Overcast and frosty; foggy; dense fog at night.
Fri... 27	30.170	29.989	38	29	44	41	S.E.	.00	Foggy; overcast; very dark and overcast.
Sat... 28	30.133	30.024	38	25	44	43	N. E.	.00	Overcast; foggy; overcast, sharp frost at night.
Son... 29	30.150	30.080	41	32	41	40	S. E.	.00	Slight frost; hazy; clear with starlight.
Mon... 30	30.187	30.090	37	22	41	40	N. E.	.00	Partially overcast; overcast; sharp frost.
Tues... 31	31.43	30.049	32	29	41	40	N.E.	.00	Hazy; frosty fog; slight shower of snow; densely overcast.
Mean	30.172	30.054	39.11	27.67	42.55	41.67	..	0.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE PAST YEAR.

Musing on this subject, we sauntered through some of the London streets on the morning of Christmas-day. It is always

the signal to us to prepare our annual address, and we approach it with mingled feelings. It is seldom cheerful to contemplate the past, and we were at first not gay, but as we walked we became lighter. The streets full of holiday-keepers and pleasure-seekers; the groups of families in full number, starting early for the long enjoyment, to last more than once round the clock; young couples brimful of happiness; the portly

rubicund bachelor uncle, the looked-for of nephews and nieces, with bulging pockets that told of treasures distributed but once in the year; the "irresistible," sporting a sprig of mistletoe in lieu of a flower in his button-hole, and looking at the passing beauties as though challenging them to come and kiss him, just as we have heard of happy countries, illustrated by George Cruikshank, in our early days, where roasted pigs ran about the streets decorated, with knife and fork stuck in their backs, and begging passers-by to eat them; the poor pale woman carrying a baby and leading a small child, and singing carols, cheered by the continuous shower of copper money that fell from those who wished others should be happy as themselves at the happy time. All together seemed cessation of labour on a day that was meant for joy, and all seemed to point to present happiness and future hope. While we reflected that with many the rest, and even the happiness, would be but for a day, still it was real for the time, and we could but think how good it would be if Christmas-day could last till the advent of the new year, and all begin afresh with hearts and feelings enlarged by happiness, and seeking to promote universal peace and joy.

We wished that all who read our weekly sheet might receive it at a happy moment; and we were thankful that in our peaceful career we were not called upon to deal with those questions that produce misery, and generate deadly strife—those things that rank among the great events of nations and men, and that become historical landmarks.

Having to do with none of these, we meet our friends in this our first sheet of the new year with thanks for all kindnesses received during the past. They go far to account for the success that still attends us, and for which we are thankful. Our course is still improving and onwards. Our friends increase in numbers. Giving expression to our true feeling, it is—first, thankfulness that we are spared to address them again; next, gratitude that so many who have supported us during many years remain with us still.

In reviewing the poultry year, we have little to note save an onward and even progress. Much remains to be done before poultry takes the place it should take as a question of food. Our imports of eggs increase yearly, attaining an enormous total; the supplies from France and Belgium are very large. The Ostend Rabbits from the latter country realise sometimes £5000 per week. We are still dependant upon France for most of our Pigeons, and many Turkeys and Geese. They are, however, of an inferior quality to our own. It is a matter of regret that although many hundreds of tons of poultry come from Ireland every year, its low quality, from want of breed, and from bad feeding and packing, makes it of very small value. We have often referred to it in our columns, and have given the necessary instructions to make it sufficiently valuable to double or even treble the returns, but the improvement has not taken place. We do not hesitate to say that the same amount of labour and outlay might easily, being better directed, produce three times the sum it does now.

While speaking of poultry as food, we may well mention the fact that a salesman in Leadenhall Market had this year a consignment of Geese that averaged upwards of 20 lbs. each in weight. Such a fact would have been deemed impossible years ago, and may fairly be put down among the good that has resulted from poultry shows.

Very large prices continue to be realised for table poultry in the spring of the year. Last spring 5s. and 6s. each were common prices for a fowl; they lasted almost from the end of April to the beginning of July. Poultry will never be cheap during that period, but from the 1st of March to the end of June it will always be remunerative. It will pay afterwards, but not at an equal rate. In poultry, as in everything else, he who forestalls the market obtains the highest price. It is the period of scarcity as compared with the natural season of plenty.

Dorkings still supply large classes of almost perfect specimens. If there be any difference the weight increases. New exhibitors have appeared among the prizetakers, running the old ones hard for many of their prizes. These come from all parts of the country, and prove that this valuable breed will do well on all soils, and in any climate. We believe this to be the best of our many breeds. Much regret was felt at the withdrawal of Lady Holmesdale from competition in this and other classes. Her ladyship was deservedly popular. The prices realised at the sale of her stock were very high, and may satisfy her that while she was riding a hobby, she was at the same time doing substantial good by adding to the merit and increasing the value of a breed already highly estimated.

Cochins have held their own well. They deserve to do so, having qualities that may be sought in vain in other breeds. They first solved the question of being able to keep poultry profitably in the small back yard of a densely populated town. Brahmas have increased in numbers, and have maintained a good position among the most important of the classes at our large shows. They, too, deserve all the popularity they enjoy. Game come nearer to perfection than any other breed, and at most exhibitions form a show of their own. This breed seems to have a charm for the English people. We do not wonder at it; none can see without admiring them. The various Hamburgs have, as a whole, been well represented during the year. If there has been a falling-off in any, it has been in the Silver-spangled and pencilled. The love of these breeds seems confined to certain districts, principally the north and north-west of England.

Spanish have decidedly improved, and have taken a step towards returning to what they once were. They have also increased in numbers. We can also note progress in Polands. Silvers have become numerous, and all classes have improved.

We now approach some of our few novelties—the French breeds, Houdans, Crève-Cœurs, La Flèche. The fact of their all being non-sitters will always prevent them from being generally popular in England. We most unhesitatingly give the preference to the Houdan; we place the Crève-Cœur next, and the La Flèche last. The first are never sick nor sorry: they are excellent layers, and easily reared. The second are often sick, but they recover. The hens of the third are tolerably hardy, but the cocks die as fast as they can be imported. They appear to have no constitution. Malays are still where they were; there is no increase of numbers. The Sebright Bantams are becoming less numerous; they want help sadly. Game show by their entries how popular they are. The Blacks and Whites make large classes, and the varieties bid fair to rival their larger brethren. Japan has been placed under contribution. We shall look next year for importations from Abyssinia.

The star of the Aylesbury Ducks pales before that of the Rouen. They are beaten in numbers and weight. The Rouen have mastered the 10 lb. each, which seemed for a long time to be the desideratum of the Aylesbury. The classes for fancy Ducks bid fair to become most attractive and interesting.

Geese are still heavy and make progress, but they seem to have reached their limit. The increase now is made-up of all the birds in the class, rather than in two or three prize-taking pens. This is right, as it shows practical good. Turkeys do not advance much, and we think the American are not shown so numerous or so good as they were formerly.

Poultry shows are still very numerous, but it is certainly true they thrive more in the north than in the south. Entries are well supported, and shows are well attended. The Poultry Club has dissolved itself. It was never needed.

We have no more to say of poultry. We have a few words to say of ourselves. It is seldom a man can speak justly of himself. It is seldom a subject on which a man is eloquent. It is that part which a man would omit. But our task is easy—it is one of returning thanks.

We have told you we are prosperous and prospering. Good and increasingly numerous friends, we thank you for it. We feel in the midst of our labours that we are strengthened, and they are lightened by the thought we have to do only with friends. We have only to repeat our old professions, our earnest desire for the success of the subject of which we treat, our sorrow if one word we have written has caused pain, our disclaimer of any wish to cause it, and our unflinching care, so far as is possible, to be guided *only* by truth and strict impartiality. We meet, then, all our friends in this, the first number of the new year, with hearty thanks for the past. Full of hope for the future, we believe we are wishing them only what they wish us, when we would say to one and all

A HAPPY NEW YEAR.

SEPARATE PRIZES FOR LIGHT AND DARK BRAHMA POOTRAS.

Will you allow me, as one who has stood by the Light Brahmas through good report and evil, to thank Mr. Worthington for his unanswerable letter in your number of December 19th? in which, writing as a breeder and exhibitor of both varieties, he calls upon judges and secretaries of shows to do equal justice to Light and Dark. I well remember, when first

I set up Light Brahmas, being told by a great authority in the poultry world, that they were not the sort to exhibit and win prizes with. Matters have certainly improved since the days when Light and Dark competed together in one class, and when, owing to fashion or fancy, very inferior Dark birds took all the prizes, while the Light ones, however good, were left in the cold shade of at best a high commendation. It was as if horses, cows, and sheep had to compete in one class, and the latter two, however good, had invariably to see all the prizes go to their rivals. If such a state of things were to continue, as in the case of the Brahmas for some time it did, with a horrible monotony, it is obvious that the breeders of the unsuccessful kinds would be discouraged and cease to exhibit, having the certainty of defeat, however good their specimens might be.

Such a fate would have befallen the Light Brahmas had not their friends seen that there was no chance of justice for them under the existing state of things, and consequently exerted themselves to obtain that justice in the shape of a separate class. This is now allotted to them at all the leading and most of the second-rate shows. But alas! there is still a vestige of the old intolerance left, only befitting the days when Light Brahmas at an exhibition were like angels' visits, "few and far between;" utterly unsuited to the present time, when any respectable show can boast its flourishing class of those once-rare beauties.

Mr. Worthington most truly points out that in cases where a cup is given to be competed for by Light and Dark it is invariably given to the latter.

I can confirm Mr. Worthington's statement by a case in point. I once had a Light Brahma cock, the like of which, and I speak with the experience of some years, I do not ever expect to see again! He was never beaten by any bird of his own breed, and prize after prize, awarded by the first judges, attested his merits. One of these gentlemen told me subsequently that this bird was a "model of what a Light Brahma should be; that since his death he had seen none to equal him, and that when taken out of his pen and compared with Dark birds he dwarfed them by comparison." A second judge declared "that he was the best Light Brahma cock he had ever seen." Now this bird, although competing often against Darks for a cup, never was successful!

Among your numerous readers there must be many secretaries and managers of shows. Let them take a hint from Mr. Worthington's letter, and instead of offering a cup or other special prize between Light and Dark Brahmas, let them give an extra prize or cup (less in value though it be), in each class. By so doing they will add, not merely to the satisfaction of exhibitors, but to the convenience of the judges; in witness whereof let me appeal to a complaint lately made in this Journal, by some one writing from the judges' point of view, of the difficulty and invidious nature of the task imposed upon a judge who has to award a special prize which is competed for by several varieties. In cases where Mr. Worthington's suggestion is not followed out, and the plan adopted of giving separate prizes or cups, instead of one cup competed for by different breeds, there is still a remedy left for the injustice of which Mr. Worthington complains.

Let it not be assumed as a matter of course that the Darks are more popular, and should therefore have the cup. This may have been very well once, when there were not, as now, well-filled classes of their rivals. Besides, "to go with the multitude" is not always the best! Still less should private preference come into the question. Nor, again, should it be said, "the Darks are the biggest," which is often not the case; and if it were so, by no means decisive.

All these are wrong methods of arriving at a decision. And here we come to the gist of the whole matter. The cup should be given, not to the best comparatively of the two breeds, but to the best relatively of its own variety. The Dark bird does not deserve the cup unless he is better as a Dark bird than the Light bird is as a Light one. The point to guide the judge should be the comparison of the bird with the standard of his own breed, and not of the other.

To make the matter more clear, take the case of a cup to be given to the best pen of Geese or Ducks at a show. If the Geese won, it ought to be, not because the judge thought they looked larger kinds, or because he liked Geese better, but because the Geese, as compared with other Geese, were better than the Ducks, compared with other Ducks. And as in the above instance it would be quite possible for the Ducks to win the cup, so ought the Light Brahmas, if better of their own sort, to win the cup also. From a neglect of this

principle, mistakes have arisen; when it is followed justice is done.

What Mr. Worthington calls for, and what the Light Brahma breeders want, is simple justice to the Light birds, not that they should be preferred above Dark birds when less deserving, but that they should not be tantalised with the seeming offer of prizes they cannot possibly win, and be beaten by specimens of another breed relatively less good, simply on the ground of the latter being Dark!—JOHN PARES, *Postford near Guildford*.

I AM very glad to see, in "our Journal" of December 19th, that Mr. Worthington has spoken a word for the Light Brahmas in exhibitions when competing with Dark. It does seem very unfair that they should have no chance of winning a cup, even against Dark Brahmas, which are inferior of their class. Surely both should stand an equal chance. Mr. Worthington's suggestion, that a cup should be given to each variety, seems a very good one, and one that would overcome the difficulty.

At the Guildford Show the Light birds did for once triumph over the Dark, Mr. Pares taking first, second, and extra prize, and a high commendation; while only one pen of Dark was highly commended, but the rest of the Dark were very inferior.—PHILIP CROWLEY.

JUDGING POULTRY—PRIZES OFFERED ERRONEOUSLY.

WOULD not many errors and much fault-finding be prevented by having a third Judge? The one would not then have to give way to the other in any opinion he may have formed on a particular pen of birds, the majority, two to one, carrying the award. I think the plan of having a third Judge would in a great measure do away with the grumbling and fault-finding by disappointed exhibitors.

I greatly admire your remarks on the Guildford Show, especially in reference to the awarding a cup for the best pen in the Show. This cup must always cause a large amount of jealousy to the winners of first prizes, each, of course, thinking his or her pen the best, and as best, of course in their idea entitled to the extra cup. This prize must often puzzle the Judges.

I would also do away with the cup for the best cock or cockerel in the show. Let the exhibitor of each single bird be satisfied (when he wins it), with a first prize; increase the amount of such prize if you like, and if the funds will allow it, but do not offer the extra cup, as it causes much ill feeling. In giving the cup for Bantams, I would also name the class that it is to be awarded to, and not offer it for general competition to any class of Bantams. At Bristol, a seven-guinea cup was offered for the best pen of Bantams, which caused no less than sixty-six entries of Game alone; some, I hear, costing fifteen guineas a-pen, bought purposely to win this cup. What was the result? a solitary entry of Pekins swept away the cup from the sixty-six pens of Game, the fifteen-guinea pens included. There would have been more satisfaction if the cup had been offered to Game Bantams alone, as this variety evidently pays best. At Leeds Black Bantams took the cup, the same also occurring at Newport.—G. T.

HECKMONDWIKE POULTRY SHOW.

AT no previous meeting has there been so large an entry; nor, as a whole, such a good competition as at that held on the 26th of December. This Show has always been very popular, and it appears to be the meeting of the year at which the breeders in the district contend for the premiership more than for the value of the prizes offered.

Game fowls were first on the list, and every class contained splendid birds. The first-prize Game fowls were equal to any seen at our large shows. Game Bantams as usual formed large classes, and the prizes were awarded to birds of the real Game colour and style. Black Bantams are always good at this Show. Spanish and Hamburgs were very good also. The Single Game hen class contained many first-class birds, the prize hen being one of the best Brown Reds we have seen for some time.

There was a good show of Pigeons, and the prize birds were very much admired.

The Exhibition was held in a large and well-lighted room, no person was allowed to enter until the Judge had completed his task, which we know gave every satisfaction.

GAME (Black-breasted).—First, G. Noble, Staincliffe. Second, C. Smithson, Heckmondwike.

GAME (Brown Red).—First, T. Suddick, Bradford. Second, H. Hutton, Cleckheaton.

GAME (Duckwings and other Greys and Blue).—First, B. Naylor, Heckmondwike. Second, W. Fell, Adwalton.

GAME (Any other variety).—First, W. Turner, Drighlington (Piles) Second, J. Brook, Gomersal (Black).

GAME BANTAMS (Red).—First, G. Noble. Second, C. Clegg, Heckmondwike.

GAME BANTAMS (Duckwing).—First, J. Hirst, Heckmondwike. Second, I. Goodall, Heckmondwike.

BANTAMS (Any other variety).—First, J. Parker, Heckmondwike. Second, S. Schofield, Heckmondwike.

SPANISH (Black).—First, S. Newsome, Heckmondwike. Second, J. Brooke, Gomersal.

HAMEBURNS (Any colour).—First, T. Swires, Cleckheaton (Golden-pencilled). Second, J. F. Loversedge, Newark, Notts (Gold-spangled).

COCHIN-CHINA (Any colour).—First, S. Schofield.

ANY OTHER VARIETY.—First, H. Firth, Bradford (Silver Poland). Second, A. Farrer, Staincliffe (Brahmas).

GAME HEN (Any colour).—First, T. Siddick. Second, W. Fell.

SELLING CLASS.—First, W. Walker, Gomersal (Piles). Second, S. Schofield.

PIGEONS.

CARRIERS.—Prize, J. Firth, jun., Dewsbury.

ANTWERPS.—Prize, A. Wilman, Dewsbury Moor.

TUMBLERS.—First, R. France, Heckmondwike. Second, H. Firth, Bradford.

OWLS.—First, H. Firth. Second, J. W. Horsfall, Dewsbury.

COMMON.—Prize, H. Firth.

DRAGONS.—First, J. Nutter, Cleckheaton. Second, R. France.

ANY OTHER VARIETY.—First and Second, J. Firth, jun. (Black Barbs and Black Trumpeters).

JUDGE.—Mr. John Crosland, jun., Wakefield.

NORTH OF ENGLAND ORNITHOLOGICAL ASSOCIATION'S SHOW.

This Exhibition of British and Foreign Cage and Song Birds was held in the New Infirmary, Sunderland, on December 26th, 27th, and 28th. This Show was very successful, and pronounced by Judges the "best" ever seen in England for quality. The subdivision of the Norwich classes was highly approved, and the successful birds were very superior. The stock shown by Mr. Orme and Mr. Walter was admirable. Mr. Rutter's Belgians were something marvellous. Of Mules there was a very large entry, and of very superior quality. The specimens sent by Mr. Ashton and Mr. Tully were remarkably fine. The Show was opened by Earl Vane.

Mr. Ashton won prizes amounting to £5, and a £5 cup; Mr. Rutter won the Committee's Cup.

We cannot too strongly applaud nor too pointedly draw attention to the Society's attempt to develop the Norwich classes—they have achieved a success; and the Society deserves, and we hope in future will obtain, more support from Norwich.

CANARIES.

NORWICH (Clear Yellow).—First, E. Orme, High Street, Derby. Second and Very Highly Commended, W. Walter, Winchester. Third, Highly Commended, and Commended, J. Bexson, Derby.

NORWICH (Clear Buff).—First, Second, Third, and Highly Commended, E. Orme. Very Highly Commended, W. Walter. Commended, J. Bexson.

NORWICH (Variegated Yellow).—First, H. Ashton, Prestwich, near Manchester. Second, G. Parkinson, Houghton-le-Spring, Durham. Third, J. Baxter, Newcastle. Very Highly Commended, E. Orme. Highly Commended, J. Stainsby, Sunderland. Commended, G. Moore, Northampton.

NORWICH (Variegated Buff).—First and Second, E. Orme. Third, S. Tomes, Northampton. Very Highly Commended and Highly Commended, J. Bexson. Commended, W. Walter.

NORWICH (Marked Yellow).—First, W. Walter. Second and Very Highly Commended, E. Orme. Third and Commended, J. Bexson. Highly Commended, G. Moore.

NORWICH (Marked Buff).—First, Third, and Very Highly Commended, E. Orme. Second and Highly Commended, J. Bexson. Commended, W. Walter.

NORWICH (Yellow, with Green, Grey, or Yellow Crest).—First and Third, W. Walter. Second, J. Wilkinson, Numbers Garth, Sunderland. Very Highly Commended, S. Tomes. Highly Commended and Commended, J. Rutter, Bishopwearmouth.

NORWICH (Buff, with Green, Grey, or Buff Crest).—First, J. Tully, Monkwearmouth. Second, G. Moore. Third, J. Stainsby. Very Highly Commended and Commended, W. Walter. Highly Commended, H. Ashton.

NORWICH (Variegated-crested Yellow).—First, H. Ashton. Second and Very Highly Commended, G. Moore. Third, J. Gibson, Ryhope. Highly Commended, W. Walter. Commended, G. Shiel, Bishopwearmouth.

NORWICH (Variegated-crested Buff).—First, J. Gibson. Second, G. Moore. Third and Very Highly Commended, W. Walter. Highly Commended, G. Shiel. Commended, J. Gibson.

NORWICH (Marked-crested Yellow).—First, W. Walter. Second, F. W. Fairbrass, Canterbury. Third, J. Bexson. Very Highly Commended, J. Stainsby. Highly Commended and Commended, G. Moore.

NORWICH (Marked-crested Buff).—First and Very Highly Commended, W. Walter. Second, T. Reid, West Sannside, Sunderland. Third and Commended, G. Moore. Highly Commended, G. Shiel.

NORWICH (Any variety).—First, G. Moore. Second, G. Shiel. Third, J. Tully. Very Highly Commended, J. Bexson. Highly Commended, W. Walter.

BELGIAN (Clear Yellow).—First and Second, J. Rutter. Third, E. Orme. Very Highly Commended and Highly Commended, W. Bulmer, jun., Stockton. Commended, W. Inson, Redland, Bristol.

BELGIAN (Clear Buff).—First, Highly Commended, and Commended, J. Rutter. Second, E. Orme. Third, H. Ashton. Very Highly Commended, W. Bulmer, jun.

BELGIAN (Marked Yellow).—First and Second, J. Rutter. Third, W. Bulmer, jun. Very Highly Commended, H. Ashton. Highly Commended, W. Inson.

BELGIAN (Marked Buff).—First, Second, Third, and Very Highly Commended, J. Rutter. Highly Commended, H. Ashton. Commended, E. Baker, Parkham, Gateshead.

BELGIAN (Variegated Yellow).—First, Second, and Very Highly Commended, J. Rutter. Third, W. Inson.

BELGIAN (Variegated Buff).—First, W. Bulmer, jun. Second, J. Rutter. Third, J. Wilkinson. Very Highly Commended, W. Richards, Bulwell, Nottingham.

GLASGOW DON (Clear).—First and Third, J. Forsyth, Elswick, East Jarrow, Newcastle. Second and Very Highly Commended, G. Nicholson. Highly Commended, W. Young, Belford. Commended, J. Greenlees, Sunderland.

GLASGOW DON (Variegated or Marked).—First, Second, Third, and Very Highly Commended, G. Park, Galashiels. Commended, J. Greenlees; W. Walter.

YELLOW CINNAMON.—First, W. Walter. Second, S. Tomes. Third, Very Highly Commended, and Highly Commended, G. Moore. Commended, E. Mills, Sunderland.

BUFF CINNAMON.—First, S. Tomes. Second and Third, G. Moore. Very Highly Commended, W. W. Yeld, Bishopwearmouth. Highly Commended, J. Bexson. Commended, E. Orme.

YELLOW CINNAMON (Variegated or Marked).—First, W. Rogers, Sunderland. Third, E. Orme. Third, J. Tully. Very Highly Commended, S. Tomes. Highly Commended, J. Galley, Newbottle, near Sunderland. Commended, G. Moore.

BUFF CINNAMON (Variegated or Marked).—First, J. Baxter. Second, W. Rogers. Third, T. Tully. Very Highly Commended, G. Moore. Highly Commended, H. Ashton. Commended, J. Oxberry, Bishopwearmouth.

LIZARD (Golden-spangled).—First, H. Ashton. Second and Highly Commended, E. Orme. Third, J. Rutter. Very Highly Commended, J. Tully. Commended, Rev. V. Ward, Canterbury.

LIZARD (Silver-spangled).—First and Highly Commended, E. Orme. Second, J. Tully. Third, H. Ashton. Very Highly Commended, T. Fairbrass, Canterbury. Commended, E. W. Fairbrass, Canterbury.

LONDON FANCY (Yellow).—First and Third, T. Mano, Camberwell New Road, London. Second, H. Ashton.

LONDON FANCY (Buff).—First, H. Ashton. Second, and Third, T. Mano.

CANARY (Green).—First, G. Atkinson, Gateshead. Second, M. Stelling, Brancepeth Colliery, Durham. Third, J. Wilkinson. Very Highly Commended, R. Robinson, Middlesbrough. Commended, J. Wilkinson.

CANARY (Any other variety).—First and Very Highly Commended, H. Ashton (Crested Belgian). Second, R. Hawman, Middlesbrough (Common Variegated). Third, T. Walter (Yorkshire). Highly Commended and Commended, W. Heap, Bradford (Yorkshire).

CAGE OF CANARIES AND MULES.—First, W. Walter. Second, J. Tully, Third, H. Ashton.

GOLDFINCH MULE (Variegated Yellow).—First and Third, H. Ashton. Second, J. Tully. Very Highly Commended, T. E. Colman, Clapham Common. Highly Commended, R. Robinson, Middlesbrough. Commended, J. Bexson.

GOLDFINCH MULE (Variegated Buff).—First and Third, H. Ashton. Second, E. Orme. Very Highly Commended, G. Parkinson. Highly Commended and Commended, G. Moore.

GOLDFINCH MULE (Marked Yellow).—First and Commended, H. Ashton. Second, W. Heap. Third and Highly Commended, G. Shiel. Very Highly Commended, J. Tully.

GOLDFINCH MULE (Marked Buff).—First and Third, J. Tully. Second, E. Orme. Very Highly Commended and Highly Commended, G. Parkinson. Commended, W. Heap.

MULE (Dark).—First, J. Tully. Second, W. Rogers. Third, W. Walter. Very Highly Commended, M. Stelling. Highly Commended, W. Heap. Commended, W. Yeoman.

LINNET MULE.—First, T. Peat. Second and Third, H. Ashton. Very Highly Commended, T. E. Coleman. Highly Commended, J. Tully. Commended, W. Walter.

MULE (Any other variety).—First and Highly Commended, W. Walter (Bullfinch and Goldfinch). Second, T. E. Colman (Bullfinch and Goldfinch). Third, Very Highly Commended, and Commended, H. Ashton (Bullfinch, Goldfinch, Greenfinch, Goldfinch, Chaffinch and Brambling).

BULLFINCH.—Prize, W. Walter.

GOLDFINCH.—Prize, W. Walter. Highly Commended, M. Stelling.

LINNET.—Prize, M. Stelling.

SKYLARK.—Prize, J. Gibson.

BLACKBIRD.—Prize, W. Mano.

SONG THRUSH.—First, J. Gibson. Second, W. Wrightson.

STARLING.—Prize, M. Stelling. Very Highly Commended, W. Walter.

ANY OTHER VARIETY OF BRITISH BIRDS.—Prize, H. P. Yeld, Sunderland (Chaffinch).

PARROT (Any variety).—First, H. Ashton (Red-breasted Australian). Second, G. Robinson, Durham (African Grey).

LOVE BIRDS.—Prize, W. Walter.

PARAKEET (Any variety).—First, H. Ashton (Grass Parakeets). Second, W. Walter (Grass Parakeets).

ANY OTHER VARIETY OF FOREIGN BIRDS.—First, W. Walter (Nonpareil). Second, T. Reid (Saffron Finch).

The Judges were Mr. T. Allenby, Durham; Mr. T. Clark, Sunderland; Mr. G. J. Barnesby, Derby.

HEDGEHOGS AND BLACKBEETLES.

I can confirm, Messrs. Editors, all that Mr. Frank Buckland observes in *Land and Water*, as to the little effect produced by a hedgehog in the destruction of beetles. He tells us very amusingly:—

"I have tried hedgehogs to kill beetles; they don't act. A hedgehog cannot possibly hold above a pint of beetles at a time,

and in my kitchen there are gallons of them. I once tried the hedgehog plan at the Deanery, Westminster. The first night after his arrival the Abbey watchman was frightened out of his wits—it was the hedgehog. The next night, fast asleep, I felt a cold nose on my face, and then a prickly thing trying to get into the bed—it was the hedgehog. The next night the servant came trembling to say there was a burglar in the dining-room, rattling the plate—it was the hedgehog. The next night the cook put some soup away, and in the morning the soup was gone—the hedgehog was found coiled up asleep in the tureen. The next night nothing was heard of the hedgehog, and for weeks we could not tell where he was gone; the cook was thankful, and the crickets sang, O, be joyful, while the blackbeetles had the free run of the kitchen. 'Years rolled on,' as the novelists have it, and a skeleton was discovered in the flue, which had smoked the whole of the house out for weeks. The hedgehog again. Thank goodness, I have seen the last of that wretch, and never wish to have another of his kind on the premises. Unless, therefore, my friends wish to run the chance of a hedgehog becoming the same pest to them as he was to me, they will never introduce them into their houses. Hedgehogs will only eat a certain number of beetles, and the beetles having good spawning ground behind the kitchen range, breed much faster than the hedgehog can eat."

I have, however, found that by the use of some phosphoric boluses prepared by Mr. Chase, of 14, Holborn, the beetles are destroyed very effectually. It is well, however, to give the beetles a supper of these at intervals of a fortnight, so that the successional crops of the young blacks may be also provided for.—C. W. J.

FOUL BROOD—LIGURIAN QUEEN RAISING.

THE majority of the readers of the bee department of "our Journal" are aware that the breeding of artificial queens, increase of stocks, and their welfare, are in proportion to the abundance and length of the honey season. The absence of the former, and short duration of the latter, limited the harvest of honey from my stock hives, yet has not prevented my raising a fair quantity of queens from the stock of Ligurians received from Mr. Woodbury last April, and also a few from the foul-breeding one obtained from Messrs. Neighbour & Sons, who, I may here say, have since made me full compensation for that unfortunate occurrence.

About the middle of May I commenced the interesting experiment of making artificial swarms, as recommended and described in this Journal by Mr. Woodbury. From the above date to the 2nd of July I had made sufficient swarms to enable me to raise twelve Ligurian queens, which were all out by the 12th of July. I had still another Ligurian queen, raised naturally; for the original stock, after all my manipulations and the abstraction of five ripe brood combs for artificial swarms, and the bees, to strengthen them, threw off a swarm on the 14th of July, the weight of which was a little more than 6 lbs! When looking over the original stock some days afterwards I discovered unmistakable signs of foul brood in a frame that had come from a stock, the combs of which had been exchanged with those of Messrs. Neighbours' diseased one before I was aware of the existence of that terrible malady. The original Ligurian was the only stock I saw attempt to clean out foul cells, which it did most thoroughly.

The last queen made thirteen queens, nine of which were from Mr. Woodbury's stock, and four from Messrs. Neighbours'. Eleven of these became impregnated, and seven of them bred pure Ligurians. This I consider a good percentage of pure-breeding queens, considering that I had only three stocks that bred pure drones. I still have five of those pure queens, which were given to black and hybridised bees, as I shall presently show. The rest I gave away or destroyed, with their bees, at the break-up of my old apiary from foul brood, which caused the destruction of sixteen stocks and nuclei, as well as the loss of 120 frames of straight worker brood combs!

Before giving an account of how I succeeded in adding these queens to populous stocks and driven bees, I may be permitted to state the cause of these proceedings, which was this. When I had increased my apiary to upwards of twenty stocks, I made the unpleasant discovery of the existence of foul brood (as described in the Journal of the 1st of August last) in all my nuclei and first-formed stocks; the black bees set apart to strengthen swarms, and all, were eventually infected by it, with the exception of three supered stocks, two of which were black bees and the third hybrids.

My first step was, on the 11th of July, to put the diseased stock through quarantine,* but I left matters generally much as they were until my neighbours began to take their bees. Such being the case, on the 7th of August I commenced operations by driving the bees of two condemned stocks separately, conveyed them home—a mile distant—taking from them at once their queens, and putting them together in an empty straw skep. Twenty-four to thirty hours afterwards I offered them the last-mentioned queen in the manner described by "J. R. J.," in No. 337, on the top of the hive under a wine glass, letting in the bees one or two at a time to see how they received their future sovereign. They at once took to her, so I transferred them to a full-sized Woodbury hive with six frames of brood from other condemned colonies. They were fed liberally, and are now one of my stock hives.

My second essay was as follows:—I drove two other stocks of bees at once, and brought them to my trial ground, as I now styled the old orchard, which is upwards of 100 yards distant from the apiary. Being deprived of their queen as before, they were also left twenty-four to thirty hours. I then drove all the bees out of the two Stewarton boxes, taking them to the poor unfortunates, knocking the latter out on a sheet, and setting the heavy Stewarton boxes in front of them. They very soon began a march towards them; and as they entered them with the song of gladness, I presented them with a young fertile Ligurian queen, which was welcomed with excessive joy, as they marched merrily into their well-furnished dwelling.

The next attempt was with a stock of bees in a frame hive that had swarmed twice, and had one of those small queens which I have mentioned before. She was removed, and another fertile Ligurian presented to them the same day, towards evening, on the top of the hive. All went well with this stock, for the next day they began to carry in pollen, and killed-off their drones.

In the same manner I continued my exchange of queens, the driven bees of one stock that was healthy being ready for the next. Simultaneously with the removal of the Ligurian queens from diseased stocks, I destroyed them, and so continued until I had disposed of them all, principally introducing them at the top of the hive. At times I had a rebel to deal with; but I was in the end successful with the whole six.

In the case of the seventh essay, both the theory and practice of giving queens at the top, as described by "J. R. J.," and which he seemed confident was never-failing, was thrown to the winds.

Two other lots of driven bees were each early one morning deprived of their queens. They even were so good-natured as to unite of their own accord. About thirty hours afterwards my favourite queen was offered to them, precisely the same precautions being taken, the same means used, and all visible conditions being precisely identical. But, no, they would not have her. One bee would fight, and a number soon clung round her like a ball, which I separated, bee by bee, in my naked hands without receiving a sting, until I came to the unfortunate queen. They did not seem to try to sting her, but only held her fast. After being rescued from them she was placed over the hive until the fourth day, when matters appearing a little more peaceable she was let in, but on the eighth day was turned out dead, proving that in bee life there is no rule without its exceptions.

The instincts of the bees are, no doubt, sufficient for them in their native regions, and in their wild state. Here they are, as it were, under foreign conditions—driven from their stores, deprived of their queen; and under such circumstances we must not be surprised if we do not always find results in accordance with our expectations. Further, if we could know all the unseen causes that are at work, I believe we should then find that they always do precisely the same thing under the same conditions. Apparent are not always real circumstances. Apart from the accepting of queens, there is at times the refusal of combs, the refusal of hives, and many other apparent anomalies, all of which have their cause.

Lastly, as regards the best method of giving bees new queens, with all due deference to Mr. Woodbury's plan which is, no doubt, the best for his hives, let me ask how he would carry it out in Stewarton boxes, without frames, and in common straw hives. It is not my intention to offer any opinion of my own, not, but that it is decided enough. In conclusion, then, I must apologise for having taken up so much valuable space in

* I eventually destroyed it, keeping its queen for future use.

describing how I succeeded, and where I failed in my manipulations.—J. B., *Bracken Hill*.

[I may be permitted to remind my friend, that I stated at the time that the mode of adding Ligurian queens, which I described as being the best with which I am acquainted, was adapted only to moveable comb hives. For hives with fixed combs, his mode of operating is probably as good as any that can be devised.—A DEVONSHIRE BEE-KEEPER.]

SILKWORM-REARING IN ENGLAND.—No. 4.

Japanese Silkworms.—I must more especially notice these worms, which have been introduced into Europe during the last few years, and are becoming much cultivated on account of their exemption from the "atrofia" so prevalent in other breeds. These are small worms of four sleeps, or changes of skin, and produce yellow, white, green, or sulphur-coloured silk. There is what is called the annual kind, which produces only one crop. This is the most esteemed. Then there are the "Bivoltini and "Trevoltini," sorts producing two and three crops, but which are not much sought after in consequence of their produce being uncertain in very hot weather, and the difficulty of always having sufficient leaves to feed them: for it is injurious, nay, impossible, to gather the leaves twice without spoiling the mulberry trees; indeed, in England these should never be wholly stripped.

On leaving Piedmont in August, 1867, I brought to England with me eggs of the Trevoltini which were hatching on my arrival in London, they being the third succession of eggs. On reaching home I fed and reared the worms quite successfully. The cocoons were spun in October, and fresh eggs deposited by the moths in November. I think, if for rearing in England, that the second crop would be the most useful, as it would be produced in the hottest of the weather here, the first crop being limited to the mere production of eggs, and in this way the mulberry leaves would remain on the trees to grow large before being used. I am not recommending the use of these silkworms rather than the annual kinds, but there are circumstances in which they might be useful, especially in this climate. The eggs of the annual breeds are to be kept, by proper management, so as not to hatch too early in the spring, or until the mulberry leaves are well advanced in growth.

I once laid a nearly full-grown silkworm on a young gentleman's hand, to look at. He started with fright on feeling its coldness, and innocently said, "Oh, dear! how cold you keep your silkworms!" He did not know that silkworms are cold-blooded. Many persons do not know it. The heat of the silkworm's yellowish blood is about equal to that of the air in which it lives. The greater the temperature the quicker the functions of the worms, and therefore the faster the food is consumed and the silk produced. Cold, on the other hand, retards the functions, and consequently the final result.

When silkworms are within a day or so of their sleep, their appetite considerably diminishes, which may be readily observed by their not consuming the leaves so much as at other times. During their sleep they eat nothing. After the sleep and change of skin, which occupy two days, more or less, they again begin to eat, although sparingly at first, but in a couple of days they will be in full appetite. At each meal one may readily judge what quantity of leaves to distribute over them by the more or less rapid consumption.

Just before their sleep they spin over the leaves, or other objects on the tables or stages on which they are, a fine web, hardly perceptible to the naked eye, over which they firmly station themselves, and thus their old skins are held while they walk out, leaving them behind. Wherever worms station themselves to undergo this operation, they must not be touched or moved, but remain under what fresh leaves are given to those not yet ready to sleep, for it rarely happens that all will do so the same day. The insect, during the sleep, keeps the head upwards, remaining fixed like a statue, and showing no sign of life unless interfered with. Immediately after the change of skin it is weak, and remains a short time while gaining strength before again eating. At the moment the change of skin is going on, there may be seen a certain lumour exuding from the insect's body, between the old and new skin, which doubtless facilitates the shifting of the then useless and burdensome skin.

The four changes of skin to which the insect is subject occur at intervals of from six to eight days. After each of the first three changes it increases in size to about double, but after the

fourth change it becomes several times larger, growing rapidly during the period of ten days or so before spinning.

When the worm has arrived at its full size it ceases to eat, and voids all excrements, becomes crisp about the skin above the head, and transparent in the body. It then goes about in search of a suitable place to produce the cone of silk. Materials for the purpose must be supplied. It is usual on the Continent to form a kind of hedge for the worms to work in, by tying together branches in broom fashion with open heads, and placing them upright on the worms' stages.

The silkworm's life is divisible into seven periods, or "seven ages"—viz., the period from the time of hatching to the first sleep, from that to the second sleep, from the second to the third sleep, from the third to the fourth, from the fourth sleep to the spinning, from beginning to spin to the conversion into the chrysalis, and the change from the chrysalis to the moth or perfect state. The time occupied by the worm in spinning is variously estimated at from four to six days; but the chrysalis is generally perfectly formed on the eighth day, and the moth may be expected out of the cocoon in about fourteen days more. These transformations depend, however, on the influence of more or less heat.

The degree of heat most suitable in a silkworm-rearing room is 70° Fah.; I mean when artificial heat is employed, as it must be; but when the natural temperature is more, say even above 80°, it will not be injurious to the worms, provided plenty of air be admitted to the room. I fix 70°, little over or under, as the most beneficial for the worms during their entire life. Sudden variations of temperature are hurtful, and much of the success of silkworm-rearing is to be ascribed to the correct regulation of the temperature, to the supply of the leaves, to proper ventilation, and to cleanliness.

A colder temperature is not really hurtful, but only retards the worms' development, unless when they are about spinning, in which case cold hardens the silky matter contained in their bodies, and they then cannot emit the silk. A suffocating heat is in general much more injurious than cold to a certain extent. A stagnant humid atmosphere is more prejudicial, especially when accompanied by too much heat. Dry weather is favourable to the worms, and for gathering the leaves, which should not be used in a wet state. Smoke will suffocate the worms, and bad rooms must be guarded against, as also mice, pigeons, and chickens, which will eat them with relish if allowed. Flies are also tormenting, and should be removed from the room or caught by some means. Light exercises a beneficial influence on the insect, and at night a proper illumination is beneficial.

Care must be taken to avoid in the silkworm room putridity, which may arise from various causes, such as neglect of cleanliness, by allowing the excrements and waste leaves to accumulate on the stages where the worms are.

Various experiments have been made to test the degree of cold silkworms' eggs and silkworms themselves will endure without destruction. The eggs have been exposed to severe frost in alpine districts without the least injury. The worms have been laid on ice for several minutes, and have survived the shock. They may be immersed in water, and even when apparently dead will revive, if not left too long therein. Tobacco smoke and snuff will kill them, and death occurs instantly if their eighteen breathing holes be stopped.

Having said thus much by way of introduction, I think it time to come to the more practical part, by noticing such instruments and other articles as are necessary in rearing silkworms.—LEONARD HARMAN, JUN.

OUR LETTER BOX.

POULTRY JUDGES (*A Subscriber*).—It is sufficiently difficult already to find well-qualified judges without our rendering it still more difficult by casting suspicions on their decisions. If, as you suggest, "one hundred first-rate judges" could be named, from whom a choice might be made, there would be no difficulty. We agree with you that judges should not be residents near the Show; but we otherwise differ from you.

BOOK (*W. H. H.*).—"The Pigeon Book," by B. P. Brent. You can have it free by post from our office if you forward twenty postage stamps with your address.

AQUARIUM MAKING (*An Inquirer*).—We know of no work that we can recommend.

ISLAND OF PERU.—"I notice that a constant advertiser in the *Journal* speaks of White Peruvian Musk Ducks as "imported from the island of Peru." It is some years since I went to school, and I have forgotten my geography. Where is the place?—T. C. II."

DARK BRAHMA COCK (*Fairplay*).—It may have been a prizetaker last year. You had better write to the advertiser for particulars.

WEEKLY CALENDAR.

Day of Month	Day of Week	JANUARY 9—15, 1868.	Average Temperature near London.			Rain in last 40 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
9	TH		41.0	30.8	35.9	14	6	48	9	44	10	44	4	47	16	7 19	9
10	F		42.1	30.0	36.0	17	5	8	10	4	23	5	1	8	16	7 44	10
11	S	Meeting of Royal Botanic Society.	41.0	30.5	35.7	21	5	8	12	4	41	6	48	8	17	8 8	11
12	SUN	1 SUNDAY AFTER EPIPHANY.	42.2	30.2	36.2	18	4	8	12	4	1	8	27	9	18	8 32	12
13	M	Meeting of Royal Geographical Society, 8.30 p.m.	40.3	30.2	35.2	19	3	8	14	4	19	9	50	9	19	8 54	13
14	TU		40.1	30.0	35.0	19	3	8	15	4	31	10	28	10	20	9 17	14
15	W	Meeting of Society of Arts, 8 p.m.	40.1	29.1	34.7	13	2	8	17	4	46	11	54	10	21	9 38	15

From observations taken near London during the last forty-one years, the average day temperature of the week is 41.0°; and its night temperature 30.1°. The greatest heat was 54°, on the 9th, 1862; and 12th, 1852; and the lowest cold 4°, on the 14th, 1838. The greatest fall of rain was 0.86 inch.

HINTS FOR AMATEURS.

IN these days of cheap glass and patent houses which may be packed-up with other goods and chattels on a tenant's removal, it has become quite the rule to see at least one glass house in the grounds of most suburban villas and other places of a similar character, in which that enthusiastic individual the amateur may display his gardening ability, and pass many an hour of healthy recreation and enjoyment. I believe I am correct in the conclusion that this enjoyment will be felt in proportion to the amount of practical knowledge possessed, and therefore, a few remarks on this subject may not be unwelcome.

One of the first and most important considerations to be kept in view is economy, not only of money but of space, so as to find room for the cultivation of as many varieties of plants as possible, and thus afford a greater amount of gratification; not that I am at all an advocate for that system of which amateurs have so frequently been accused—namely, of attempting to grow everything, and succeeding with nothing, but because, judging from many instances which have come under my notice, I am certain that many owners of a glass house do not derive that gratification from its possession which it is fairly calculated to afford. Of course, if the house is designed for the growth of any particular class of plants, that is a different affair, and has nothing to do with the kind of general-purposes house of which I purpose treating.

I will suppose a house of this kind to be a lean-to, having a stage in the body of the house, and a shelf or stage near the front sashes, and over the pipes or flue, with other shelves near the glass. Doubtless in winter the greater portion of the space will be occupied by bedding plants, and the remainder by a few greenhouse plants.

Of these, one of the best for winter flowering is the *Primula*, which may be had in bloom all the winter by following the excellent cultural directions given in No. 351. After the plants have received their final shift, and have a sufficient number of strong leaves, these should be drawn gently down to the edge of the pot by bast connected with a wire under the rim; other leaves in abundance spring up, and fill the central space; more of these are brought down to meet the others as may be required until a compact mass of leaves is formed, out of which the blossoms spring, interspersed with a few fresh young leaves. This training is not requisite in every case, as some varieties are naturally of a spreading habit.

Cinerarias are also most useful for winter and spring blooming; also a few *Camellias*, *Azaleas*, winter-flowering *Ericas*, *Epacris*, *Carnations*, and *Mignonette*, the last sown in March, and grown either as dwarf bushes or trained to pyramids, which form is, I think, the most graceful of all for this plant.

Of *Cyclamen persicum*, young seedlings will produce thirty or forty blooms in the first year, if the seed is sown in March in heat, and the young plants put first into thumb pots, and kept in the same heat till somewhat

established, when they are taken to a cool house, and shifted into large 60's, in which pots they blossom early in the autumn if kept in the house all the summer. This is a most desirable plant, continuing in bloom during the winter and the early part of spring.

Solanum capsicastrum, with its bright red berries and deep green foliage, is a most useful and charming plant for winter decoration. Young plants turned out of the pots in May, and planted in any warm border in common garden soil, form pretty plants by the autumn, making a dense growth, and being loaded with green berries which become scarlet by Christmas. The plants may be taken up early in October, and potted, retaining a slight ball of earth; they are placed in a shaded part of the house and syringed twice or thrice a-day until they are established.

This list might be extended considerably, but I think the plants named are well calculated to afford a pleasing and sufficient variety of blossom in the duller months of the year, and are also all of most easy culture. To follow these there may be a few herbaceous *Calceolarias* sown in June, shifted into larger pots as necessary during the winter, and kept on a shelf near the glass; *Pelargoniums*, and, above all for a summer display, some *Fuchsias*, which may be wintered under the stage.

The removal of the bedding plants to the open air should be followed by the introduction of a row of pot Vines along the front stage, one to each rafter. Now, supposing the rafter to be 12 feet in length, the pot Vines will not require more than half of its length; the remainder, or top part of the roof, may very profitably be turned to account by placing on the back stage under each rafter a large pot to be three-parts filled with rich loamy soil, with plenty of drainage, and a Cucumber plant to be turned out into each pot. It will add very much to the grower's pleasure if a different variety be put in each pot, and much useful and interesting information may be gained in this way.

During the past summer I grew in pots a plant of each of the following sorts:—*Kirklees Hall Defiance*, *Dr. Livingstone*, *Empress Eugénie*, *Paul's Telegraph*, and *Hedder Winter Prolific*. Of these, *Telegraph* showed fruit first, and *Empress Eugénie* last. *Dr. Livingstone* was the most prolific, having as many as twelve fruit at one time all fit to eat, with plenty of smaller fruit. *Kirklees Hall* was the most handsome fruit, and *Empress Eugénie* the longest.

The plants may be trained downwards to meet the pot Vines, and also to the top of the house. A few laths nailed to the rafters will form an excellent trellis. After the first crop of fruit is cut a top-dressing of fresh sheep dung should be given; this, together with occasional waterings of liquid manure, will keep the plants in full vigour as long as they are required, and cause the fruit to be fully developed. Should this be neglected, the plants will soon languish, and the fruit become deformed. As economy is the order of the day in this case, I would recommend *Rhubarb* pots, which have been used during the winter months for their legitimate purpose; these inverted will do admirably, and will want but little drainage, as they have neither bottom nor top.

It will be seen that I have refrained as much as possible from entering upon cultural details, as the culture of all the plants named has been fully given in past numbers of "our Journal." I shall be glad, however, if these few remarks should call forth any additional hints which others may have to offer on this subject.—EDWARD LUCKHURST, *Egerton House Gardens, Kent.*

ASPARAGUS CULTURE.

(Continued from Vol. XIII., page 441.)

In marking-out the beds it is well to arrange so that some of them shall run east and west, and present their sides to the sun's rays when these are most direct and powerful, for in this way they have greater effect than when the beds run north and south, and the consequence is the heads are produced somewhat earlier than in beds having their ends to the sun's rays at mid-day. The beds most likely to afford an early produce are those 3 feet wide, and they should run east and west. For the general supply it is quite immaterial whether the beds run east and west, or north and south.

The beds and alleys being marked out at the requisite distance, a stout peg of some durable wood, as oak or elm (but not the sap wood, as that decays quite as soon as larch), should be driven in at each corner of the beds; the pegs ought to be of sufficient length to be firm in the ground, and yet have their tops 6 inches above its surface, and they will for a number of years indicate the position of the beds and alleys. From the stakes or pegs the distances for the rows are to be measured; and a line being stretched, a trench should be cut out as for laying Box, only it will need to be made deeper, so that the roots may be laid out straight without bending, or doubling-up their ends. On the other side of the line a corresponding cut or trench should be made, which will leave a sharp ridge, both the cuts being made in a slanting manner from the line. The trenches will require to be about 9 inches deep. The planter should take half the roots in one hand, and half in the other, place the plant astride the ridge, and spread out the roots like a fan against the sides of the cuts. A little fine soil should be drawn over the roots, and the trenches or cuts ought to be filled level with the crowns of the plants with some light sandy soil, enriched by mixing with it an equal quantity of leaf mould and well-rotted manure. This will prove very beneficial to the plants; but if the soil is naturally light and rich this compost may be dispensed with, only it is well to cover the roots in all cases with some decomposed vegetable matter, making it pretty firm about the roots. In planting, come are content to make but one cut, and spread out the roots like a fan against the cut. This answers very well; indeed, there are many ways of planting, but the two named I think best.

In planting, the crowns of the plants should be kept all on the same level, and they ought to be covered with 2 inches of fine soil, or be kept that depth below the surface. The plants ought to be carefully taken up with a fork, preserving the roots as entire as possible; and they should be kept as little exposed to the air as can be, so that they may not become dried—indeed, they ought to be immediately covered when taken up, and when planted no time should be lost in covering them with soil. A good watering should be given after planting, and the plantation must be well watered for ten days or a fortnight, unless the weather be showery. Planting ought not to be done when the ground is very wet; showery weather is best.

The best time to plant Asparagus is when the plants have begun to grow, and have shoots from 6 to 10 inches in length. The beginning of May is a very good time, and they may be safely planted up to the middle of June. I am aware that March is the usual time for planting Asparagus, and to doing so then there is little objection if the soil is light and dry; but when it is cold and wet, as it very often is in March, many of the roots perish before vegetation begins. When planting is performed from May to the beginning of June, the plants' juices are active and the soil warm: hence immediate growth is encouraged. Planting in March, so far as my experience goes, is attended with gaps in the rows, no matter how well the operation is performed, and how great the after-care; whilst planting in May or June insures every plant growing and making more progress than those planted two months earlier. In replacing plants failing in plantations made in March by fresh plants in June, with shoots 8 inches to a foot in length, there is a vast difference in the growth; for although those planted in June may wither and turn brown at the top, they

invariably make a better and stronger growth, and are easily distinguished from the March-planted. Under these circumstances I am persuaded that Asparagus is best planted when it is growing freely.

The best plants are those one year old, but two-year-old plants succeed admirably in soils favourable for Asparagus culture, whilst in unfavourable soils one-year-old plants are best. In light soils I would employ two-year-old plants, and in heavy soils those one year old.

The plants are raised from seed, which should be sown in good, rich, light, sandy soil in the beginning of April. It is best sown in drills; five in a 4-foot bed, the two outer drills 6 inches from the sides of the beds, and the three inner drills 9 inches apart. One-foot alleys will be sufficient to allow between the beds. The drills may be made from half an inch to three-quarters of an inch deep, and should be covered or filled with fine soil when the seed is sown, as it ought to be before the drills become dry. Sow it thinly rather than thickly. The beds should be kept clear of weeds, and the plants should be thinned-out to 2 inches apart, the strongest being retained.

As to kind or sort, it is known that there is but one sort of Asparagus. The Gravesend, Mortlake, Deptford, Reading, Battersea, Grayson's Giant, Dutch Red-topped and Green-topped, are all simple varieties of the same plant, due to the variation of soil, situation, climate, and culture, one or other of which induces different appearances.

Instead of sowing and rearing the plants in nursery beds, and afterwards transplanting them when one or two years old into permanent beds, seed may be sown in the first instance in shallow drills at the distances already named for the rows of plants; and the seeds being sown about an inch apart, they should be covered with half an inch of fine soil. The seedlings ought to be thinned-out, when 2 or 3 inches in height, to a distance of 1 foot in the rows, the strongest plants being left, and the weakest taken out. It will be the fourth year before the plants will be of sufficient strength to furnish Asparagus. Beds thus made are quite equal to those planted with one or two-year-old plants, and come into bearing quite as soon, only there is for the first year an apparently great waste of ground; but this may be entirely avoided by taking a crop of Onions the first year, and a good row of Cauliflower may be had in each of the alleys.

In the year of planting little will be required beyond keeping the beds clear of weeds, frequently stirring the surface, taking care at the same time not to injure the crowns with the hoe, nor to go so deep as to injure the roots. In June the beds may be well watered with liquid manure, and the application may be repeated once a-week during any dry periods that may occur in July and August. When the stalks are completely yellow and withered in autumn, the surface should be lightly stirred, and then receive a dressing of 3 inches thick of half-rotten short manure, which ought to be covered about 1 inch deep with soil from the alleys. Towards the close of February the beds should be forked over carefully, not going so deep as to injure the crowns, and the whole left rough. At the close of March or early in April, according to the earliness or backwardness of the season, the soil of the beds ought to be stirred, making it fine with a fork and raking, the rough lumps being drawn off into the alleys. Lame-off the beds afresh, after making them level for their full width, and fork over the alleys; and these and the beds having been made straight, the plantation will have a neat appearance. This brings us to the end of the first year after planting.—G. ARLEY.

(To be continued.)

WINTER-FLOWERING PLANTS.

It is very pleasing to observe the interest taken in winter-blooming plants by the contributors to the Journal; I think such plants are an acquisition to any collection. Even Wallflowers have come in for their meed of praise, and, humble as they are, they have held a high place in my estimation for a number of years. I cultivate the German varieties from seed, and several of the old, many-coloured, double varieties, but especially the orange. These I strike from cuttings in the spring in heat, grow them on, stop them once during the summer, which causes them to throw out side shoots, and pot them as may be necessary, keeping them plunged in coal ashes, and supplying them with water as they require it; sturdy growth is thus encouraged, and in the autumn they are placed in a cold pit. As they throw up their spikes of bloom, they are removed to the

greenhouse or conservatory to perfume the atmosphere. When they have done blooming in the spring I cut them down or throw them away, but old plants when well cared for often do well for years.

Another very desirable winter-blooming plant is *Jasminum nudiflorum*, which can be made to assume any shape you please as a bush or a climber. Though common, it is, nevertheless, useful and ornamental, brightening-up any dull corner with its lively orange blossoms.

Abelia uniflora is another very useful winter-flowering plant of easy culture. It can be grown in a compost of turfy loam, leaf mould, and sand, in well-drained pots, and will well repay the cultivator for his care, by producing a profusion of lilac-coloured *Pentstemon*-like flowers in succession all through the winter.

PLANTS IN FLOWER IN DECEMBER.

Dec. 4. <i>Malconia maritima</i>	Dec. 10. <i>Chimonanthus fragrans</i>
<i>Ranunculus repens</i>	" 15. <i>Garrya elliptica</i>
<i>Lamium album</i>	<i>Hamamelis virginica</i>
<i>Jasminum nudiflorum</i>	<i>Ruscus aculeatus</i>
<i>Heilias perennis</i>	<i>Viburnum tinus lucidum</i>
" 7. <i>Viola odorata</i> , double	" 20. Double <i>lilac</i> Primrose
<i>Daphne laureola</i>	<i>Eriogonum villarsii</i>
<i>Senecio vulgaris</i>	<i>Hesperis matronalis</i>
<i>Polygonum</i> , various	<i>Achillea scopulorum</i>
<i>Viburnum tinus</i>	" 24. <i>Viola tricolor</i> , various
" 10. <i>Arbutus nana</i>	<i>Erysimum Fordianum</i>
Small-leaved Box	" 28. <i>Helianthus niger</i>
<i>Corydalis lutea</i>	<i>Pyrethrum parthenium</i>
<i>Lamium purpureum</i>	<i>Antirrhinum majus</i> , var.

—M. H., *Acklam Hall, Middlesborough-on-Tees.*

EVERGREENS IN HOUSES.

WHEN the days are at the shortest, and the long dark nights herald in but little of sunshine, and the old year is near its dying-out, then we think of an ancient almost universal custom in Christian countries, that of bringing in evergreens from the woods to adorn our houses. Not only our homes, but churches, chapels, theatres, concert rooms, every place, we try to make glad with the growth of the summer we have left behind. We bring in the Ivy, the Laurel, the Holly, and the Pine—anything and everything that will not fade before the bitter cold blasts of winter. We count nothing trouble, and spare no expense according to our means, to brighten-up our homes, be they rich or poor.

Varying taste and skill find expression in how we do all this. Some gather the dark branches together and hang them up in hall or corridor, a heavy, shapeless bundle, as if for it to be there were enough, and with no feeling akin to that which prompted the heathen in the old time to arrange for his gods to see. Others put it here, and there, and everywhere, until comfort is invaded, and yet no good effect gained. Others make of it a work of art, with great care join dark leaves and light together, relieved by scarlet berries, thus making a delicate tracery for door, window, or arch, or small-leaved wreaths for picture, bust, or statue.

All do not share in this home decoration with the same enthusiasm, some think nothing of it, and so make little do, and then only as complying with a custom. Save for custom sake they would not mind if their homes stood out bare and leafless as the trees outside; and what is worse, they have no sympathy with those who do it, call it mere child's play and make-work, and not worth the trouble and expense, just for a few weeks; yet the same people never count the cost of a ball or banquet which is but for a few hours. Some content themselves with twining a few sprigs among the gas burners, not minding if they darken the dinner table below, and throw strange shadows on the faces of their guests; whilst some, again, thrust sprays in the windows between the sashes, making them holdfasts against the storms which are sure to come.

Then there are some who object to decoration on the plea of its spoiling their houses, like Mr. Butler, who, having bought a new house for his bride, fears it will not last out their time, and trembles at the sound of a hammer, lest a tack should be driven into his boards, or a nail into his walls; and is sure that a *Camellia* from the conservatory would do just as well as a cartload of evergreens. But his wife, unwilling that their pretty home should be unadorned, and yet mindful of the lately taken though low-spoken vow, brings all her skill and ingenuity to work, and spends uncounted hours sewing small pieces of Laurel, or Pine, or Ivy, to a broad strong band of

calico, which is then passed in and out among the pillars supporting the staircase handrail. A large Fern crowns the summit, and the whole is done with the aid of a thick needle. Though her husband admired her taste, seeing his wish had been obeyed and his property was uninjured, yet her mother thought it "very useless work, all very well if she had the time. Married people did not always have much to spare. For her part she thought it quite enough to put a bunch of Holly with berries on the plum pudding."

"Yes," replied her son, "and let it burn away with the brandy."

There are, too, some people who overdo the decoration, crowding every available corner with heavy branches. With them it is quantity, not quality—like the Doctor up at the Old Lodge, who darkens his windows, and spoils his paintings, and laughs at his wife when she becomes cross, and declares "there is no good in it; for no sooner is the house cleaned down than in comes a lot of dirty, sooty evergreens, with which the whole place is grimed over. Fingernails, large and broad enough for a day labourer, are left upon chairs, walls, and everything; and what is worse, his poor patients are not visited. It might be all very well to house-decorate down in the south about London, where the plants are clean, and where the evergreens are green, not black, as they are about the Old Lodge."

And then there are some who would not on any account take evergreens into the homes of those who were suffering from a near loss; not that they are indifferent to the legend, or fancy themselves beyond the reach of its blessing, but from a seeming perverted idea "that it is not right to do so."

Few are like the Scotch gardener, who used to spend many evenings providing evergreens, and would have no place go unadorned. It is said that in his enthusiasm he one winter hung a large piece of Pine over the ale barrel. Fine pieces of *Aucuba* he used to send in for the parlour, with leaves broad and bright, and as beautifully painted as those of a *Croton*; and he used to say, "They would be as much thought of if they were less strong and hardy; and for winter uses they were worth a vast deal more, for they would brave all the tempests that blow over our island, while the *Croton* would not survive the first breath below 32°." Nor did other places go unremembered: even the kitchen must have its huge bunch hung up over the new bacon, "to flavour it as it dried-in." Stable, outhouse, and greenhouse, everywhere was there some reminder of the festive time.

Then there was the little maiden who, a stranger to our northern ways, ever took away the finest bunch of Holly to put over the bee hives, to let the bees know Christmas had come, "lest there should be no luck in the coming summer, for offended bees make no honey, and where she came from they told the bees everything."

And then there is the Grange, a grand place enough in its way, yet nearly squeezed in at its centre, certainly much air kept out of it, by the big Portugal Laurels, and Hollies, and the like, grown so near to it, that the wonder is their roots have not moved it before this. Why the boys and girls living there care for no evergreens to decorate with, save the Mistletoe, and no wonder, they see so much all the year round. Their good mother ever affirms that the only berries that never stain, however hard they be trodden down into the carpets, are the white berries of the Mistletoe, and truly within its influence we all make merry, if there is any mirth left in us, and would not that our evergreens should ever miss their complement: though, as the youngest Grange girl says, "Kisses at Christmas under the Mistletoe do not mean anything but fun, so she is not sure she cares about them."

So with the thought that it is not only an old custom but a glad thing to do, may we ever brighten-up our homes to their very utmost at Christmas-tide, for the sake of our friends as well as our own. Let us to try to hang up our evergreens with a deeper joy and a fuller reverence as the years pass. Ah! hang them up in very gladness, whatever be our surroundings, for they will show forth as brightly in road-side cottage as in stately mansion.—MAY.

THE MISTLETOE IN FRANCE.

IN Mr. Robson's interesting paper on the Mistletoe, lately published in the Journal, I observe that he remarks—"I believe that the Mistletoe is more plentiful in England than in any other country. I think I have heard of its growing in the north-west of France, but less plentifully than in some of the

south-western counties of England." With regard to this, I beg to assure Mr. Robson that the Mistletoe grows in this neighbourhood (St. Malo, Brittany), in such abundance, as, I believe, is not to be equalled in any county in England. Vast quantities are sent over from this port to Southampton by the London and South-Western Company's steamers during the Christmas season. It is consigned to merchants in London as a regular article of export; and one would suppose that more than enough of it is sent away from this country to supply all the purchasers in that metropolis.

Its beauty is also equal to its abundance. We have cut from a small plot of ground adjoining our house small trees of Mistletoe, perfect in form, and with pearly berries as numerous as the leaves. The country at this moment is green with the Mistletoe; it affords an agreeable relief to the eye from the otherwise bare and leafless aspect of Nature. It is to be regretted that its growth should be so pernicious to the Apple trees, which, in the depth of winter, it clothes with its deceitful verdure.

I have seen it also in abundance in all parts of Normandy, near Avranches, St. Lô, Caen, where it grows freely on the trees bordering the canal, and at Houdéur, from which exquisite neighbourhood it is also exported to England, although not, I think, in such quantities as from St. Malo. Judging, therefore, from its abundance in these last-named localities, I am inclined to believe that the Mistletoe loves the sea breeze, and that the vicinity of the ocean is, at least, not unfavourable to its growth; thus arriving at a conclusion exactly opposite to that of your esteemed correspondent.

A certain degree of moisture in the air and in the earth seems essential to its existence; must we add, a certain want of cultivation of the soil also? In all the places that I have named the standard of agriculture is far below that of England; and I shall be glad to learn from those better informed than myself whether the Mistletoe is ever found where the soil receives high cultivation. I am myself an ardent admirer of this beautiful parasite, and I fear that the appearance of the draining machine will be the signal for the extinction of this once highly venerated and ever mysterious plant of "merry Christmas."—A TRUE BRITON, *St. Malo, Brittany*.

[The Editors are very much obliged by this communication. Will the writer oblige them by sending her full address?]

GYMNOSTACHYUM VERSCHAFFELTI.

PERHAPS a few hints upon growing this beautiful-leaved plant may not be out of place for the guidance of the amateur.

The compost which we use consists of about equal parts of turfy peat and loam, with a good mixture of silver sand.

It strikes very freely in river sand if afforded a bottom heat of from 70° to 75°.

It requires a gentle bottom heat; and covering the plant with a hand-glass much improves its appearance, keeping the foliage from lying so flat, as it is otherwise very apt to do. The plant requires a good supply of moisture. It throws out roots at nearly every joint, and succeeds remarkably well in a propagating pan, as the young shoots can then be pegged-down and will soon strike roots into the soil.

We planted a spring-struck cutting of 1867 last summer, in a propagating pan, pegged all the shoots down excepting one that was left for a leader, then covered the surface of the soil with moss, and subjected it to the treatment above described. This plant now measures about 8 feet in circumference, and stands about 2 feet high.—JAMES TAYLOR, *Foreman, Womersley Gardens, Yorkshire*.

CUTTING OFF BLOOMS AND PRUNING ROSES.

THE following are queries from a correspondent ("Q. Q."), with Mr. Radclyffe's replies.

"Mr. Radclyffe says he does not approve of cutting off the blooms of Hybrid Perpetuals, as he has found that many of his, cut for exhibitions and bouquets, have greatly suffered by such treatment. Does this apply only to the Rose being cut down to solid wood, or is it also bad simply to nip off the blossom itself with its flower stem? I hope not, for one of the great pleasures of Roses—having them in-doors—would be thus annihilated. This question applies both to Briar and Manetti Roses."

[There is no doubt that in France seed-formation, and, in cold England, flower-formation and dropping of the flower, are Nature's

terminus, and conducive to maturity of wood. If first flowers are cut off, and a severe winter succeeds the summer without a intervening autumn, as in 1860, the wood would not stand the winter so well as if the first centre flowers had been allowed to drop off. You might take off a bloom here and there, and leave, in the case of a truss, some one or more blooms to expand and drop; or you may let the centre bloom drop, and when the other flowers of the truss expand cut off the whole truss.]

"After the whole truss of blossom has decayed, is it good to cut the whole stemlet down to a healthy bud?"

[It will do no harm, and perhaps hasten the next series of bloom on that stem. The next series may be cut off the secondary wood at any time without harm, because it may be presumed that the first wood, which will be for next year's performances, is ripe. In short, always try to have a certain portion of wood ripe. Manetti Rose wood does not require so much ripening as that of Briar Roses. The most immature wood will bloom on the Manetti. The object of obtaining mature wood is to stand a severe winter. I do not trouble myself to cut off the truss of bloom unless it is unsightly. My trees are in such condition that they will break below the truss, and bloom quickly again. Nothing but frost stops them.]

"Are Tea and Tea-scented Noisette Roses also injured by cutting off their first bloom? The question applies both to those on the Briar and Manetti stock."

[These families do not like much cutting at any time. They require at times thinning-out, and the points of the main shoots to be cut to a good eye, and the side branches shortened a little to a good eye.]

"What mode of treatment would be best to adopt with the March prunings of Roses in order to make them strike?"

[September is a better time to strike the cuttings of Roses out of doors than March; because in the former case the earth is still hot and the air cool, whereas in March the earth is cold and the air hot. I should advise taking off some shoots with a heel, daubing the base with cow dung, which is very favourable to the formation of roots, and then planting the cuttings under a north wall or shady place, as the sun might dry them up before they could strike. Sand also greatly promotes root-making. If I have a Rose root-sick I dig it up, cut its roots back, and put a double handful of sand over the roots, and then decayed dung and soil, and it generally makes an abundance of roots in a little time. If this is done in summer I place a cloth over the Rose. The hotter the weather is the quicker Manetti will strike.]

"Will Mr. Radclyffe name six Roses of the Général Jacqueminot colour possessing advantages over that Rose, noticing which he considers—Séateur Vaisse or Madame V. Verdier—the best Rose to have a number of for one bed?"

[It is difficult to name Roses exactly of one colour. Séateur Vaisse is perhaps on the whole better than Madame Victor Verdier. They are, however, both admirable. The nearest, perhaps, to the Général in colour are Maurice Bernardin, first-rate; Séateur Vaisse, Madame Victor Verdier, Madame Bontin, Duchesse de Caylus, Madame Julie Daran, and Maréchal Vaillant. Darker than these are Charles Lefebvre and Lord Macaulay, both first-rate. If rosy or lighter crimson is not objected to, Lady Suffield is very beautiful and excellent. They are all fit for beds, and, of proven Roses, in their colour the cream up to this time. A bed of Jules Margottin, light crimson, is fine.]

"Does Mr. Radclyffe think that there is sufficient difference between Céline Forestier and Triomphe de Rennes to admit them on the same wall?"

[Yes: the foliage of Céline Forestier is distinct from all known Roses. I have many of both these, 12 feet high, against my south frontage. They are among the best Roses in the Rose kingdom. The blooms are sometimes, but not usually, alike.]

"Would charcoal strewn over the surface of the ground prevent mildew?"

[I should think not. The best way to prevent mildew is to give the plants, in hot weather, plenty of water over their roots and foliage. You never see much mildew or many aphides after a thunderstorm.—W. F. RADCLYFFE.]

ORNAMENTAL-FOLIAGED PELARGONIUMS.

VARIOUS have been the suggestions of your correspondents as to the classification of variegated Pelargoniums, yet no one seems to have hit upon a proper term whereby to designate them as a whole. That which I propose, "Ornamental-foliaged," is almost a household word with gardeners. I beg to offer it for the consideration of perplexed floral and horticultural committees revising their schedules for 1868; and if adopted it will be the means of restoring Beauty of Oulton and other varieties of that section, to their proper position of plants grown for their foliage, and as such worthy to be placed on a

par with Flower of the Day and Golden Chain. I have no doubt there would be many a fine plant of Beauty of Oulton, Luna, and other kinds left at home, and, very probably, something more commonplace substituted, in consequence of the decision of the Floral Committee of the Royal Horticultural Society on the 2nd of July last causing no little disappointment in various parts of the country.

I am unable to see any benefit to be derived from separating the section to which Beauty of Oulton belongs from the others at general exhibitions, but think there is much harm, especially at the smaller shows, where there will not be more than one class for variegated Pelargoniums. At these exhibitions the so-called Golden Zonals will be practically excluded; and where they may have a separate class assigned to them, I think they present too great a family likeness to be properly appreciated by the outside public. In fact, your remarks on the Pelargonium Exhibition held on the 17th of September pointed this defect out.

I do not wish to depreciate these special exhibitions: far from it. I think they are excellent as a means to determine the best varieties in each section; but when this is done we want to see the best of each section meet on one common ground, or under one general term. This, I believe, will be best accomplished by the designation I have suggested. It will admit all that are out, and all that have to come yet, as varieties that are grown for their foliage in contradistinction to those that are grown for their flowers, be that foliage black, brown, yellow, or white, or all combined.

To put the question in a more popular point of view: supposing that I have ten specimens of the Golden Zonals, and ten of what are called the true variegated Pelargoniums, would not the general effect be greatly improved by judiciously arranging the twenty plants together in one lot rather than by separating them into two, drawing the line at some supposed difference between coloration and variegation?—JOHN COUPLAND

GRAFTING THE VINE.

THERE have been a few letters in the Journal on grafting the Vine, and in all that has been written on the subject I have been much interested; yet it seems to me that a little more information ought to be forthcoming from those who have had experience in the practice.

Suitable stocks have been found for the Apple, Pear, and other fruit trees; those stocks are propagated by thousands, and the different effects of the stock on the tree grafted thereon are most surprising.

I have two Louise Bonne Pear trees growing in the same row, one on the Quince stock, the other on the Pear; and the result is that the Pears from the Quince stock are much larger than they are from the Pear stock.

Again, the Marie Louise does not succeed on the Quince, but does well on the Pear stock.

I hope some day to hear of a stock for the Vine which will influence the plant as much as the Quince has the Pear, the Paradise stock the Apple, and the Mahaleb stock the Cherry.

My experience of Vine-grafting is not very extensive. I have never, however, been able to effect a union by performing the operation when both the stock and scion were in a dormant state. In the spring of 1867 I had a number of Black Hamburgh Vines in pots. These I grafted with Muscats and Gros Guillaume. At the same time and under the same circumstances I grafted Pears, Oranges, and Camellias. They were then plunged in bottom heat, but the Vines failed and the others succeeded. The Vines soon began to bleed, and some of the scions made roots in the grafting clay, but in no case was a union effected. However, not to be foiled, I grew some stocks and plants of the variety I wanted to graft, inarched them in the summer, and I found no difficulty in effecting a union in that way. I placed both pots together, cut a slice off the stock and another from the scion, and tied the cut parts together in the months of June and July.

I believe the Black Hamburgh to be a good stock for some varieties. The Canon Hall Muscat succeeds on it, and, as is well known, so does the Black Muscat of Alexandria. I have, however, seen the Red Frontignan and Chasselas Musqué grafted on it without perceiving any improvement. The former was as liable to shank and the latter to crack as they were on their own roots.

Grafting Vines seems to have been well understood a century ago. Speechly, the Duke of Portland's gardener at Welbeck in

1759, speaks of a Syrian Vine in the hothouse there, which had on it sixteen different varieties of Grapea; and he further says that by grafting a weak and delicate-growing Vine, such as the Blue Frontignan, upon a robust and vigorous stock, as the Syrian, it will produce well-sized handsome bunches as large as the Hamburgh; and that "the Syrian Vine raised from seeds is greatly preferable to all others for stocks." He must have had a good variety of Syrian, as it is recorded that he grew a bunch of it weighing 20 lbs.—J. DOUGLAS.

PROPAGATING PELARGONIUMS.

In your issue of December 26th I noticed Mr. Stewart's reply to Mr. Perkins. In course of his (Mr. Stewart's) remarks, he has made a reference to what appeared from me on page 277. I wish to correct a mistake that Mr. Stewart has fallen into—it was Golden Chain and it alone I spoke of, not the strong-growing varieties of bedding Pelargoniums. I have no wish to be implicated in the controversy, because I think it is a mere matter of fancy and convenience, known only to oneself, how, when, and where to put in cuttings of Tom Thumb, &c. It is a well-known fact that there is nothing more easy and simple than propagating the common bedding Pelargoniums.

I was truly pleased to learn from Mr. Stewart, on page 419, that he found so little trouble in getting-up Golden Chain. I wish I could say the same. What a boon it would be to me! I fancy I can hear my wish passing from the lips of many a gardener, but I am afraid the wish will be all that will fall to our share.

Not having had an opportunity of seeing Mr. Stewart's method as carried on by him at Nuneham, I must, of course, take his word; but can it be that he can put-in cuttings of Golden Chain in the last week in August, and secure sufficient for his trouble, and have well-furnished plants for planting-out in the following May? It may be unjust of me to doubt the authority of Mr. Stewart, for there are examples of men who can solve a problem in an hour, while it takes others years to do so.

I will some future day put Mr. Stewart on a way of obtaining cuttings of Golden Chain to keep up his stock, without at all interfering with the plants in the flower beds, as that seems to be the sole point that he is working on.—R. E., Womersley Park, Yorkshire.

A FEW NOTES ON DRACÆNAS.

OF all the plants which have from time to time been introduced into this country from the tropical and sub-tropical zones, those of the genus *Dracæna* are, perhaps, among the most lovely; for what plant surpasses in richness of foliage the *Dracæna terminalis* (Ti plant), and its handsome variety *latifolia pendula*? The former expands a long tapering pendulous leaf with a very dark ground colour, and marked with distinct lines of vivid crimson; while the latter has leaves of a pendulous and reflexed character, broader and more obtuse than those of the former, with distinct lines running the entire length of the leaf. *Dracæna Cooperi* is very similar to the last-described.

The East Indies, as well as tropical Africa, appear to be eminently rich in *Dracænas*, many of which are valuable for medicinal purposes, and as being farinaceous and edible. Around the huts of the natives an extremely ornamental fence is made by planting the *Dracæna terminalis*, which is not allowed to reach more than 5 feet in height. The tuberous roots abound in starch and sugar, and a spirituous liquor is likewise obtained from them by fermentation. The stems when cut down and stuck in the ground soon send out new roots.

In the gardens of the Marquis de Souza, at the little town of Oratava, is the celebrated gigantic Dragon tree, which ten men by joining hands can scarcely surround at the base. In the year 1400, when the island was first visited by Europeans, this great tree was, as it is now, a wonder. Precise accounts of the dimensions of this great Dragon tree have been handed down to us, and it appears that since the island of Tenerife was first discovered this tree has added but little to its bulk. Indeed, the slow growth of young Dragon trees is a proof sufficiently convincing that the age of this particular tree must be extraordinarily great. In the Palm house at Dangstein, near Petersfield, is a plant 12 feet high, raised from a cutting taken about twelve years ago from this venerable tree; and in the

musum there is a true picture of the same, drawn on the spot by Mr. J. J. Williams, which figures the tree with the branch that was taken off expressly for Mr. Skinner, who afterwards presented it to Lady Dorothy Nevill. The base of the branch from which this plant was taken is preserved in the museum at Kew.

Humboldt gives an accurate account of the famous *Oratava* specimen, which he informs us is 75 feet high and 45 feet in circumference. Sir George Staunton also described one he saw (which I believe to be the same), as being 12 feet in diameter at 10 feet from the ground.

The *Dracena draco* is supposed to be originally a native of the East Indies, and to have been subsequently introduced into the Canary Islands, consequently, to quote Rhind's words, "the high veneration in which it is held by the Guanches of these islands would indicate its introduction there from the Indian continent, as also the original country of the primitive inhabitants of the Canary Islands."

The resinous matter called dragon's blood is yielded in great abundance by this plant, from the surface of the leaves and from the cracks in the trunk. It is of a fine dark cinnamon or Indian red colour, and is tasteless and almost inodorous. Its fracture is glossy, and its powder of a deep crimson hue.

Having thus briefly noted the history of the *Dracena*, I will now offer a few cultural remarks.

The *Dracenas* are usually cut down whenever disposed to become too tall, because, being branchless, their beauty is lost if the plants are allowed to grow till they lose their compactness. Of course, in cutting them in, the natural height of the species must be taken into consideration. Such plants as *Dracena bicolor*, *elliptica*, *striata*, and *ovata*, are of dwarf growth; while *Dracena terminalis*, *ferrea*, and *purpurea*, attain a height of from 9 to 15 feet. All of these, with the exception of *Dracena draco*, when becoming unsightly through lankness, should be cut back in order to obtain the former compact form.

Young plants are, however, much preferable to the old ones, and these may be easily obtained by cuttings taken from the summits of the old plants, and treated similarly to other fine-foliaged plants. Large branches of the *Dracena draco* strike very readily when placed in a brisk bottom heat. The pots should be well drained, and the compost should consist of equal parts of rich fibrous loam, peat, and leaf mould, with a good sprinkling of silver sand. The loam and peat may be pulled to pieces by the hand, and the leaf mould sifted through a coarse sieve.

In summer, when the plants are in active growth, they require an abundance of moisture, both at the root and in the atmosphere, with a tolerable amount of air; but in winter these conditions must be almost reversed, preserving then a moderately dry atmosphere, and no more water at the root than just enough to maintain the plants in a healthy state. A summer temperature of from 60° to 75°, with a rise from sun heat, suits them; and in winter one of between 50° and 60°, or even less.—GEORGE NEWLYN.

RECOLLECTIONS OF A VISIT TO BERRY HILL.

SITUATED on a gentle acclivity about a mile and a half to the south of the snug little town of Mansfield, is the compact residence of Sir Edward S. Walker, Bart. I had the pleasure of visiting the well-kept gardens attached to it on a lovely morning during the last week in August.

The mansion is a plain unpretending structure, yet containing much more internal accommodation than would be supposed from its outward appearance. The fruit and plant houses are so arranged that they can all be traversed from the mansion without the visitor passing out of doors. A verandah on the west side of the mansion communicates with the conservatory and from thence to the other houses.

The conservatory was the first house to which my attention was drawn, and, as might be expected from Mr. Speed, the skilful head gardener, presented a charming picture. Among the plants in bloom, the most deserving of notice were *Erica tricolor* Wilsoni, *E. Massoni* major, *E. delicata*, *Echmea fulgens*, a choice collection of *Fuchsias* covered with a profusion of flowers, and *Zonal Pelargoniums*. These were blended with Ferns and plants with ornamental foliage, such as *Pandanus javanicus* variegatus, *Aspidistra lurida* variegata, and *Caladiums* in great variety. Of Ferns I noticed pretty plants of *Asplenium bulbiferum*, *Polystichum angulare*, *Pteris tremula*, *P. tricolor*, *Polystichum angulare proliferum*, *Adiantums* of sorts,

and *Dicksonia antarctica*. The last-named ought to be in every collection of greenhouse plants, however limited. Graceful Ferns, and plants with fine foliage or elegant habit, such as *Aralias*, *Dracenas*, *Rhopalas*, *Ficuses*, *Palms*, &c., are much more refreshing in their appearance, and produce a more striking effect in the embellishment of the conservatory, when skilfully arranged, and interspersed with plants in bloom, than when dumpy and ungraceful flowering plants only are used. On the back wall were five *Camellias*, which promised a rich display of bloom during the winter.

Passing out of the conservatory I entered the early vinery, generally started in December, the first in the range of fruit houses; and as these are all in a continuous line, I shall notice them in the order I passed through them. In this house all the fruit was gathered except about one bunch, which had been left on by way of experiment. The branch on which it was growing had never been stopped, and had rambled away 5 or 6 yards. It has been stated in these pages, and I believe the late Mr. D. Beaton tried to establish the theory, that by allowing the shoot on which a bunch of Grapes is produced to grow on the extension principle it would tend to increase the size of the bunch. It had failed in this case, for Mr. Speed told me that it was nearly the smallest bunch in the house. It is worthy of remark that in the early period of the season the shoot was very weakly, and by allowing it to grow at will it was at its base nearly as thick as a man's finger, which result could not have been attained had it been stopped at the fifth or sixth leaf, which is a very general practice.

From this house I passed through a Nectarine house, cleared of the fruit, into a late vinery. Here the fruit was hanging in splendid bunches all over the house. The varieties cultivated in this house are *Barbarossa*, *Trebbiano*, *Lady Downe's*, *Muscats of Alexandria*, and *Black Hamburgh*. The Grapes were very fine, and such as are rarely excelled. The bunches of *Barbarossa* would average about 7 lbs. each; those of the *Trebbiano* were unusually fine; whilst *Lady Downe's*, for size and symmetry of bunch, left nothing to be desired. The *Muscats* were also very fine, and the bunches would average from 3 to 4 lbs. each.

The next house was devoted entirely to Figs; it was a lean-to. The Fig trees were cultivated in pots in the front, and those on the back wall were grown in the border. From this house Mr. Speed had gathered a continuous supply of fruit from the middle of May until the time of my visit—the end of August.

On leaving this house I entered another late vinery, in which was a very excellent crop of fruit. The bunches were very even and regular in size, and, like those in the other houses, bore ample evidence of Mr. Speed's superior skill in the production of Grapes.

Passing out of the late vinery and through another Peach house, I entered the new large vinery. It is 50 feet long, 19 wide, and 15 high. The whole of the front of the house was planted with *Muscats* of various sorts, and the back wall with *Black Hamburghs* and *Lady Downe's*. The front of the house is built on arches to allow the roots to ramble in the outside border. The border inside and outside is 30 feet wide, is chambered underneath, and heated with hot water. In this house there was a crop of Grapes worth going a long journey to see. The Vines were planted one to each rafter, and one in the centre of each light in the front, and on the back wall they were about 3 feet asunder. All the Vines carried a most abundant, regular, and fine crop of fruit.

The last house in this range is set apart for Pine Apples. It is 75 feet long and 19 wide, with a path running along the centre. It was filled with a fine collection of Pines in all stages of growth, and the plants were characterised rather by thick sturdy foliage than by long lanky leaves, as are too frequently met with. Up the pillars by the sides of the path, Mr. Speed grows his pot Vines.

From this house I passed along a narrow walk into the flower garden. It is bounded on the north side by the range of houses just noticed, and on the south by a belt of fine timber trees, which skirt the park. A broad gravel walk runs from the mansion westward, parallel with the vineries, &c., and is terminated by a rustic summer house. Along each side of the walk is a row of Irish Yews, which form an avenue; and on each side beyond the Yews the beds are cut out in the turf in the form of diamonds and half-diamonds. At the time I saw them the beds were very gay; and if I may remark on the individual beauty of any bed, it must be on that of *Coleus Verschaffelti*, one of the most gorgeous bedding plants at present known, as recently stated by your correspondent Mr. .

Rawbone. Nothing could surpass the richness of its velvety foliage; and as I happened to call on one of the finest mornings we had been privileged with during the summer, I saw the beds in their very best trim. The most useful varieties of Pelargoniums out of the ordinary run were Lord Palmerston, with lake-coloured flowers tinted with crimson, and fine bold trusses; also a variegated form of Stella. I suppose it to be a sport from that popular variety. Its leaves were very much cupped, with a very clear, broad, white margin; the bright crimson scarlet trusses of bloom were borne well above the foliage on long flower scapes. Standing a little distance from the beds, the broad white margin of the leaves being so prominent, very little of the green surface of the leaves was to be seen.

I left the flower garden by a shady walk, bordered on each side with rockwork, on which were growing hardy Ferns and other plants adapted to shaded and moist localities. This zigzag walk opens into a wide open space on the south side of the enclosed kitchen garden. There is a walk, 160 yards long, which runs the whole length of the garden, with a ribbon border on each side. The right-hand border was planted with *Cerastium tomentosum* in front; second, Cloth of Gold Pelargonium and Purple King Verbena alternately, and Stella Nosegay Pelargonium at the back. The left-hand border had *Cerastium tomentosum* in front; the second row was *Lobelia speciosa*, Cloth of Gold Pelargonium, and Iresine Herbstii repeated the whole length; the third row, *Gladiolus*. This border was truly beautiful. Behind the *Gladiolus*es was a row of standard and dwarf Roses alternately, and the stray Roses of Gloire de Dijon, Souvenir de la Malmaison, Général Jacqueminot, &c., which overhung the *Gladiolus*es relieved the ribbon lines from that stiffness which too often prevails in this style of planting. I had the gratification of seeing the *Gladiolus*es at their best, and they alone were worth my journey.

I must pass through the kitchen garden with a hasty glance. It is two acres in extent, and surrounded with well-built brick walls, and these were furnished with useful fruit trees, fine examples of training. Indeed, I have not seen any in the district trained with such exactness, except at Lord Middleton's at Wollaton Park, under the superintendence of Mr. Gadd. Round the kitchen garden were numbers of pyramidal Apple and Pear trees in excellent condition for bearing. The garden appeared very fertile, and fine crops of vegetables of every description were plentiful. I noticed several rows of Veitch's Perfection Pea, which had been nearly destroyed by the snake millipede (*Julus pulchellus*), which Mr. Speed had experienced some trouble in exterminating; other rows not attacked by the millipede supplied plentiful gatherings.

Leaving the kitchen garden we entered an enclosure, in which were a number of useful small span-roofed houses. Some were occupied with successional Pines, others with early and late Melons and Cucumbers, stove plants and Ferns, and one very useful house was filled with greenhouse plants preparatory to blooming in the conservatory. There was a temporary stage that could be readily taken away, and the house filled either with tall-growing plants or with those of dwarf growth. Besides these there were numerous frames filled with *Cinerarias* and other plants, all valuable in their respective seasons of bloom. Many hardwooded plants, such as *Azaleas*, *Heaths*, and *Epacris*es, were either placed on or plunged in cinder ashes, all being in perfect health and vigour, fully proving the fact that Mr. Speed not only grows fine Grapes, but develops superior skill in the cultivation of plants. I noticed in particular in 12-inch pots a very fine lot of *Chrysanthemums* all well grown, and every branch staked and tied-out with the utmost care.—QUINTIN REED, *Gardener to W. Hollins, Esq.*

MY EXPERIENCE OF AN ARNOTT'S STOVE.

THERE can be little doubt that the amateurs and lovers of gardening who are anxious to possess a glass structure of their own, are each year increasing in number. There can be little doubt also, that the most formidable impediment in the way of carrying out their wishes is not the immediate outlay which is necessitated in erecting the structure, but the yearly expense which must be incurred for fuel. This, in the very nature of the case, must have a powerfully deterring effect, and is the Rubicon which many an amateur enthusiast hesitates to ford. Now, in my remarks on this subject I can advance no new theory of heating, my object being simply to take a practical walk on an old, very old, and comparatively unused path, and endeavour to clear it of a few briars, which, in these days of

hot-water travelling, have been suffered to ramble comparatively undisturbed across it, making it, if not unsafe, certainly unpopular.

For long ranges of glass and houses especially devoted to early forcing, the hot-water system of heating has no rival, but for a solitary structure erected in the garden of an amateur for the purpose of keeping bedding plants and growing a few Grapes, I recommend Arnott's stove, as calculated to answer all his purposes efficiently, and more economically than any other mode he can adopt. This, I am aware, is only confirmatory of what has repeatedly been advised in the Journal, but if my experience on this head can have the slightest re-assuring effect, the purpose of my paper will be attained.

Under my charge are two vineries heated by Arnott's stoves. I will instance one house: it is 6 feet high at the front, 11 feet high at the back, 14 feet wide, and 18 feet long. This house is heated by an Arnott's stove placed against and about the centre of the back wall. The stove is 18 inches square and 2 feet 6 inches high. The smoke pipe is carried 18 inches horizontally; it then takes a vertical position for about 5 feet, turning again horizontally into a chimney in the back wall. This is better than taking it upright through the glass, as being out of the way of the foliage of the Vines on the roof. More than twenty-five years ago this stove cost £4, and during this period a few shillings may have been incurred in repairs, but these have been extremely trifling. For a number of years the gas coke consumed was carefully noted, and it never amounted to 15s. per stove per annum. This is an outlay which I apprehend the most economical need not be frightened at. Even this first outlay of £4 may be reduced, for a handy bricklayer and smith would, according to the ordinary charges, put up one for a less amount than the sum named.

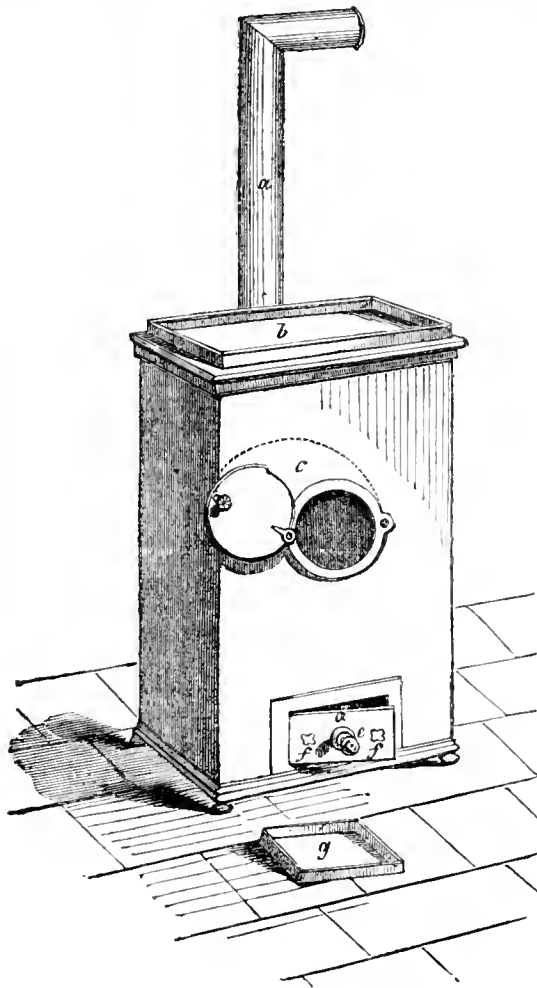
The mode of erecting a stove of this class I will endeavour to describe.

Procure a plate of half-inch cast iron having a groove cast in it close to and all round the edge, 18 inches square; on this stand the grate, which should be about 10 inches square, and standing on four iron legs about 4 inches long. (See accompanying section and elevation.) The edge of this stand-grate make the foundation for building; carry up a few firebricks all round to the height of 18 inches, which will give an interior for the fire of 8 inches square by 18 inches deep. Over this space bend an arch of sheet iron. Enclose the whole with a shell of sheet iron, which should fit in the groove in the foundation plate; carry it up to the required height. The cavity between this shell and the brickwork fill with dry sand, bringing it up to and covering completely the top also. Over this place a square of cast iron, cast in the same mould as the foundation plate, and the stove is complete, excepting that an orifice must be left on one side and close to the top for the smoke pipe, and another on the opposite side, only about 6 inches lower, for putting in the fuel; while, of course, at the bottom of the stove must be a square into which the ash box slides, fitting closely under the grate, the door of the box buttoning tightly to the side of the stove, which here should be made additionally strong by rivetting on a strap of one-quarter inch iron quite round the opening. Have a ventilator to assist combustion in the centre of the ash box door, and you have a stove cleanly, efficient, and economical, infinitely superior to an ordinary iron stove, in being dust-proof, and the bricks and sand retaining heat for hours after the fire becomes low, or even after it has gone out altogether. This, however, is a contingency which we do not calculate on here, for by adding necessary fuel night and morning, and paying due regard to the ventilator, the fire may be kept in for weeks or months if required. It is well, however, to let it go out sometimes, to take out any clinkers which will in time form in the grate. This must be done by the hand; if, therefore, any one is afraid of touching a cold clinker with the fingers, he must look to other modes of construction.

Now, as to the capabilities of stoves of this kind, I confess when I first saw them I had not much confidence in their power; and on expressing slight doubts of their efficiency, the proprietor very significantly pointed to the fine crop of Grapes overhead, a mode of reassuring me that admitted of no controversy. Therefore, thinking what had been done before might be done again, I cast aside all prejudice and determined to try what the stove in question really would do, and, indeed, what it would not do, for the negative part of a question is oftentimes instructive.

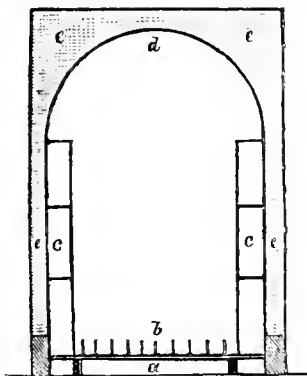
In the house above named are eight Vines trained up the rafters. These eight Vines give annually about 120 bunches of Grapes of a quality which are appreciated on a nobleman's

table; indeed, I am safe in saying, that they are not inferior to any grown in the neighbourhood under the most elaborate system of heating by hot water. These Grapes we commence



ELEVATION.

- | | |
|---------------------------------|-----------------------------------|
| a, Smoke pipe. | e, Ventilator. |
| b, Evaporating pan (moveable). | f, f, Buttons for fastening door. |
| c, Opening for fuel, door open. | g, Moveable ash pan. |
| d, Ash-box door partly open. | |



SECTION.

- | | |
|----------------------|-----------------------------|
| a, Foundation plate. | d, Sheet-iron plate arched. |
| b, Grate. | e e, Sand. |
| c c, Firebricks. | |

cutting in July. This is as early as it can be accomplished, but is sufficient testimony of the capability of the stove to resist

frost; and notwithstanding that it is placed at the back of the house, so well is the heat diffused and disseminated, that in the most severe weather of winter, *Cinerarias* standing within a few inches of the glass in front have been untouched by frost; but for additional safety, it is only the work of a few moments to remove comparatively tender subjects further into the house. It is, however, but fair to observe, for I wish to be very accurate, that there is always more heat in the back and top part of the house; and notwithstanding every attention of airing and bending the Vines from the immediate neighbourhood of the stove as long a time as possible, the Grapes at the top of the Vines are ripe a week to ten days before those at the bottom of the rafters. The bunches, however, are very regular, and as good at the bottom of the Vines as at the top. I have stated what the stove will do; the owner authorises me to say, that he does not wish to see better Grapes, that he prefers some ripening before the others, and that he has previously sent you a sample of what Grapes can be grown by an Arnott's stove.

I will now introduce the negative, and state what it will not do, or rather what it does not do here, for I am aware there is a list of objections against it.

1st, It fills the house with smoke on lighting the fire. No. Unless it is out of order, the sheet-iron casing being worn through in places, or improper fuel used, there is not the slightest perceptible escape of smoke. Perfectly dry shavings and split wood should always be used in lighting the fire; no harm will then result on this point.

2nd, On attending to the fire a dust is raised which settles on the plants and obstructs their respiratory organs. No. With ordinary care the plants in this house present as clean an appearance as those in an adjoining structure heated by hot water, and there is certainly not so much dust distributed in an entire year from the stove as there is from sweeping the paths and shelves once without the necessary damping previously.

3rd, The heat in close contiguity to the stove is of such a parching and burning nature, that colonies of red spider will find it particularly congenial to their taste, and will, as a consequence, establish themselves in the house. No. The Vines have not for two years had a single dash with the syringe, and during this time not a single red spider has been seen. The evaporating pan on the top of the stove is to a certain extent a preventive of this pest.

4th, The stove in its combustion emits sulphurous and deleterious fumes impregnating the atmosphere of the house, and is in some degree hurtful to vegetation. No. My experience does not teach me this. I will state a fact relevant to this point.

During the spring of last year, while the house was painted, the occupants of a plant stove were transferred to this vinery, in which the Arnott's stove was working. The stove was heated to the utmost in providing a temperature suitable to this class of plants, which consisted of Ferns in active growth, Begonias, *Caladiums*, *Dracenas*, *Gloxinias*, and *Gesneras* in bloom, and other plants of a very tender nature and susceptible of injury from any cause; but after a three-weeks sojourn not a frond of the most delicate Fern, or the texture of a flower so admittedly tender as a *Gesnera* or *Gloxinia*, was in the slightest degree injured or discoloured. Indeed, I could have wished they had remained a week longer, for they did receive a certain amount of injury from the paint on returning to their established quarters.

I need say no more on this subject. I say not a word against hot water; I am fully cognisant of its value as a heating medium, and cheerfully accord to it many advantages and general superiority, but still it does not on all points meet the views or requirements of every class, and as every class looks for information through the columns of the Journal, the experience may suit some one. Therefore, for a small detached house for general purposes, and where Grapes are not required before August, I unhesitatingly recommend Arnott's stove as safe, clean, efficient, and in a pre-eminent degree economical.

As an addendum to this communication, and in order that everything bearing on the case may be made public, I may say that when the greenhouse and plant stove were to be heated by hot water, it occurred to my employer, that instead of having the nuisance of a chimney in the garden, the smoke might be carried across a walk and along the front of the vineries, escaping by a chimney in the back wall of the vinery. This plan has succeeded perfectly. It adds a gentle warmth to the front of the houses, and I have had no trouble from smoke. This does not in the least degree detract from the capability of

the stove, as it answered every requirement for many years before this convenient mode of getting rid of an unsightly object was effected.

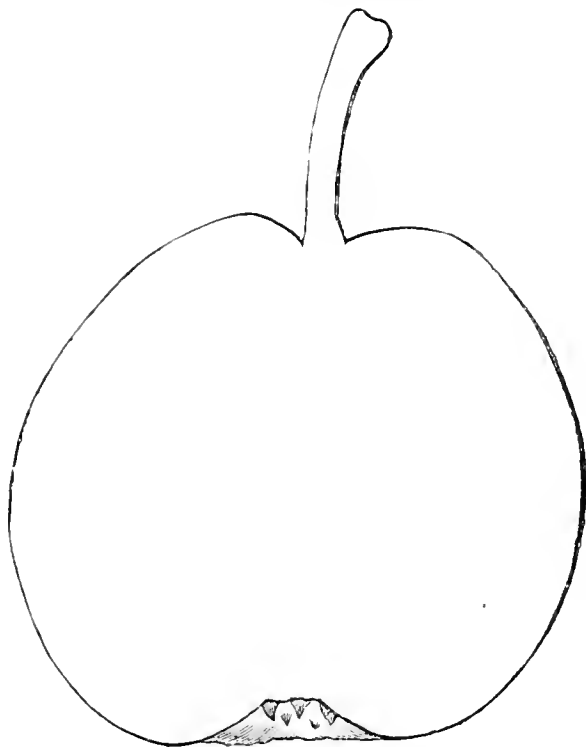
My employer says, that in an article on Arnott's stoves a tribute should be paid to Dr. Arnott, who, having discovered how by slow combustion the greatest quantity of heat can be obtained from the smallest quantity of fuel, made known the principle to the public, instead of turning it to his own advantage by a patent. Many stoves called "patent" are constructed on this principle.

A stove similar to the one I have described burns in the lobby of the hall, and distributes a genial warmth throughout the house, and another warms our large parish church.

As gas is made on the premises, we have a constant supply of good coke, but the value consumed in any one stove does not exceed the amount I have named—15s.—J. W.

PEARS.

5. ALTHORP CRASANNE. — A dessert Pear of finest quality. Ripe from October to December. It was raised by T. A. Knight, Esq., and first fruited in 1830.—(*Fruit Manual*, p. 239.)



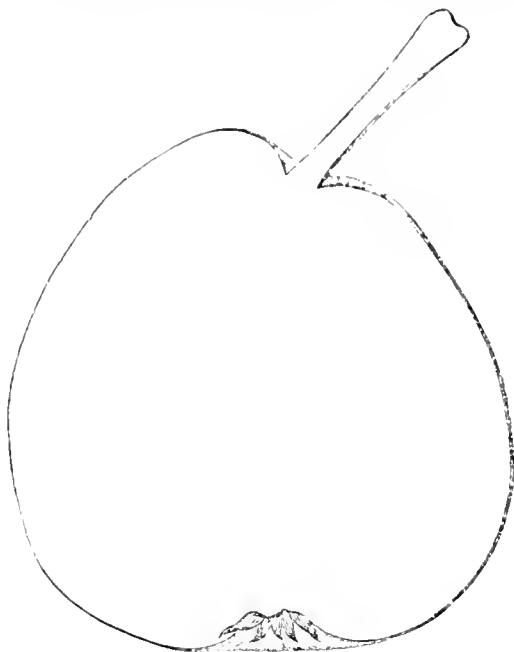
5. Althorp Crasanne.

6. AMADOTTE.—Fruit medium-sized, 2½ inches wide, and the same in height, of a roundish obovate shape, and flattened at the apex. Skin thin, of a pale green colour, which changes as it ripens to clear lemon yellow; but where exposed to the sun it is of a deeper yellow, and faintly tinged with red. In some parts it is thickly marked with rough, brown, russety dots, particularly round the eye, and sometimes it is entirely covered with fine cinnamon russet, except on some parts that are very much shaded, and then the ground colour appears. Eye half open, with long acuminate segments, and placed in a small and sometimes pretty deep basin. Stalk stout, 1½ inch long, obliquely inserted on the summit of the fruit, with a fleshy protuberance on one side of it. Flesh yellowish white, crisp and juicy, half melting like *Passe Colmar*, and with an unusually sugary, rich, and very strong musky or rather anise flavour, which, as Diel says, "one seldom meets with."

It ripens in the end of October, and continues in use till about the middle or end of December.

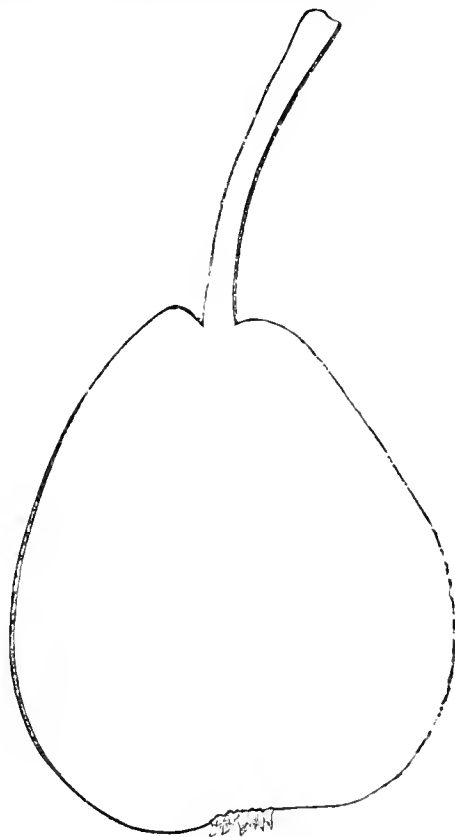
The Amadotte has been long known in England. It is one of the varieties which Rea says "are choice Pears lately ob-

tained out of France by the diligence of Sir Thomas Hanmer. It is said to have been discovered in a wood in Burgundy,



6. Amadotte.

belonging to Lady Oudotte, and hence called *Dame Oudotte*, which has since been changed into *Amadotte*."



7. Amande d'Été.

7. AMANDE D'ÉTÉ.—Fruit somewhat about medium-sized 2¾ inches long, and 2¼ wide. It is of an obtuse pyriform shape,

rounded at the apex, and tapering gradually to the stalk, even and regular in its outline. Skin smooth, pale green at first, but changing as it ripens to a pale lemon yellow, without any colour next the sun, and marked with a few traces of thin pale russet. Eye quite open, with short segments, and placed in a very flat and shallow depression. Stalk 1½ inch long, slender and woody, inserted in a small round and narrow cavity. Flesh white, rather firm, not buttery, nor very juicy, sweet, and with a distinct almond flavour and perfume, but with no character in it to merit notice.

An inferior Pear, ripe in the beginning of September, and soon rots at the core.

The tree bears well and regularly, and forms a handsome pyramid on the Quince.

NOTES AND GLEANINGS.

We are happy to hear that the Crown has decided to relieve Mr. INGRAM from the care of the Royal Gardens at Frogmore, an office which he has held with great credit to himself for a period of fifty-four years, and that an ample retiring pension has been conferred upon him. Four years ago, when Mr. Ingram had completed his fiftieth year in the service of the Crown, a number of his friends presented him with a handsome testimonial, as a mark of their esteem for him as a friend, and of their appreciation of those qualities which enabled him to fill for so many years, and during so many reigns, a position of high trust not unattended with some difficulty. During his active career Mr. Ingram has rendered good service to the profession he so much adorned, as is testified by the many varieties of fruits which bear his name and that of the Royal garden, as well as several florists' flowers which have taken a prominent place in our gardens. We congratulate Mr. Ingram on this termination to his long and active labours; and we know that he will carry with him into his retirement the good wishes of his friends and of all with whom he has come in contact in his professional capacity.

— With the beginning of the year a new series of "THE FLORIST AND POMOLOGIST" was commenced, which in all respects, as regards the plates, typography, and literary matter, is not surpassed by any other pictorial gardening periodical. The plate contained in the first number is worth all the money charged for the magazine itself, and illustrates two extraordinary Begonias, introduced by the Messrs. Veitch & Sons, the flowers of which are as large as those of the Christmas Rose, and the plants themselves perfectly hardy. The moderate price of one shilling, at which the magazine is published, brings it within the reach of all who wish to keep informed of the introduction and delineation of the best novelties.

WORK FOR THE WEEK.

KITCHEN GARDEN.

At this season, when there is little cropping to be done, everything should be made clean and neat. All vegetable refuse may be collected into a heap to rot for manure; nothing of this kind should be lost. Vacant ground may be turned up roughly, to be fully exposed to the action of the weather. This is especially necessary in the case of strong soils, in order that the frost may render them more friable. When manure is applied, a little at a time, and as often as an opportunity and the nature of the crops will allow, will be better than when the ground is overloaded with dung. *Peas* and *Beans*, defend forward crops from slugs by quicklime or coal ashes, or strew tender leaves of Cabbages on the ground, and examine them every morning. Early *Radishes*, *Lettuces*, *Herbs*, and *Small Salads* may now be forwarded on slight hotbeds. The earliest crop of *Potatoes* may be potted in 48-sized pots, placed anywhere in the stove till fairly up, and then be removed to a cold vinery to harden. Afterwards turn out the plants in a turf pit, covering with reeds, and placing a little hot dung under them.

FRUIT GARDEN.

Continue to prune any fruit trees if not done already, taking care, however, to keep the spurs short and close, otherwise they soon become long, and give the trees an unsightly appearance. *Strawberries*, it will be well to take some into a cold vinery or Peach house, and place them on the shelves.

FLOWER GARDEN.

If the weather is mild, the planting of shrubs and trees may

be proceeded with, as may also the pruning where pruning is necessary. All the spare ground in the reserve garden, if not already dug, should be laid up in ridges, and where the ground is heavy a good dressing of leaf mould and sand, 2 or 3 inches thick, will improve it much. Take advantage of frosty weather to bring in a quantity of sand, in which to plunge half-hardy plants when hardening-off for the flower garden. Auriculas require great attention just now. If healthy they will withstand intense frost with impunity. Care must be taken to remove decayed leaves, stripping them downwards to avoid wounding the stem. The surface soil should be kept stirred, and the plants be allowed all the air possible, bearing in mind that drip or too much moisture at this season is very injurious. Polyanthus must have all trusses of flowers removed as these appear, if good blooms are to be expected at the proper season. Tulips appearing above ground should be covered on frosty nights with mats or hoops placed across the bed. If sand is put on them it must be white or silver sand; if covered with pit sand impregnated with iron it will have a most deleterious effect on the foliage. Carnations must have all the air possible if they are well established and of a fine glaucous hue; but they require little attention in comparison with those that have been potted late. If in frames, bricks ought to be put at each corner, raising the woodwork at least 4 inches from the ground to secure good ventilation. Itanunculus beds, which ought to have been prepared in the autumn, may have a dressing of old cow manure and decayed leaves forked slightly in preparatory to planting in February. Examine Pink beds, and where the pipings have been raised by the frost or worms they must be carefully fastened. In bad weather labels ought to be made, hand-glasses mended, leaden layer pegs straightened, Carnation sticks made, and similar work carried on.

GREENHOUSE AND CONSERVATORY.

A great step towards the proper management of stove plants in winter was made when those in flower at this season were found to do well enough in a temperature averaging 45° in the conservatory. *Euphorbia jaequiniiflora* is the best stove plant we have in winter, and the flowers are even more brilliant in winter in the conservatory than in the stove. Among the forced flowers the Narcissi, Hyacinths, and early Tulips, with some of the different Roses, are now the most prominent. Sweetbriar is always most welcome in winter, and no place should be without Mignonette in pots or boxes. *Polygala chamaebuxus*, a very dwarf plant, is excellent for forcing, and will keep a long time in flower in any dark corner, where little else would thrive. It requires abundance of water. Frequent failures result from the careless watering of greenhouse plants in winter, not by too much, but the contrary. The best criterion is to have all the soil in the pot of equal dampness throughout, and neither wet nor dry. Keep these and all other plants free from dead leaves and insects, and neatly tied-up to stakes, or trained according to the habit of the plant.

STOVE.

Many of the Orchids are now enjoying a comfortable repose, while others, less fortunate, have to struggle on against our long nights and comparatively dull days. Assist the latter class by giving them as much light as you can, and do not excite them to too rapid growth. Look also over the *Hedychium* now potted under the stages or on shelves, and start a few roots into growth to prolong their season. No plants are more fragrant or more suitable for the conservatory when in flower than *Hedychium maximum*, *coronarium*, and *Gardnerianum*; but the flowering of the last is, unfortunately, of short duration. All sorts of foreign stove seeds, or of any description from abroad, may now be sown with safety. This is the best time to sow seeds of fine *Rhododendrons*, *Azaleas*, and *Kalmias*. If the paths, stages, plants, &c., are kept clean, and the heating apparatus is in good working condition, there will be little necessity for giving much air in dull weather at this season to stove plants at rest.

FORCING FITS.

These are now crowded with Roses, Lilacs both common and Persian, Sweetbriar, Cinerarias, Hyacinths, Tulips, Narcissus, Jonquils, Anne Boleyn Pinks, Gardenias, *Rondeletia speciosa*, *Franseria Hopeana* and *latifolia*, *Acacias*, Chinese and other *Azaleas*, *Pelargoniums*, *Rhododendrons*, *Andromedas*, &c. These may be syringed once a-day and smoked occasionally, and a temperature of from 55° to 65° should be maintained.

PITS AND FRAMES.

Take advantage of the first leisure hour to take stock of the plants for bedding-out in these structures; and if you have not

sufficient of some kinds, introduce a few plants into heat to supply cuttings for propagation. Where there is the advantage of a little heat, a sowing of Ten-week and Intermediate Stocks may be made; and if strong plants of *Clintonia* and *Brachycome* are required for bedding-out, seeds of these may also be sown.—W. KEANE.

DOINGS OF THE LAST WEEK.

The weather has been a hindrance to much of the usual routine of out-door labour, and many workers have been unable to pursue their usual employment. For all, and especially for those frozen-out, it is good that "Christmas times" do come once a-year.

KITCHEN GARDEN.

Wheeling, trenching, collecting ice, and preparing for planting have been the chief work out of doors in the severe weather, little of the weather as yet being sufficiently stormy to render house work necessary, which, therefore, has been kept in abeyance. Fresh successions of Sea-kale, Rhubarb, &c., were placed in the Mushroom house. The Celery was allowed to remain covered-up, and hardly anything in the vegetable way that was coming on and protected received light, except Asparagus, which otherwise would have become very white. The little snow has been a good protection to Cabbages, Broccoli, and Greens in the open garden; no vegetable seems to have suffered as yet. It is advisable to go over early Broccoli, such as Snow's and Grange's, and not only turn over a leaf, but place a little clean hay over the heads that are forming. Our Cauliflowers heading in an earth pit will do good service if we can manage to keep vermin at a distance.

FRUIT GARDEN.

Much the same as in previous weeks, only we gave, in a snowy day, when the glass was covered, a good fumigation to one of our orchard houses, with cut and bruised laurel leaves and twigs. The smoke would enter every cranny where even hot water might miss. Right or wrong, we attributed our freedom from insects last year to this smoking. We do not mind how dense and suffocating the smoke is, provided there is no flare or flame, and the smoke does not become hot. When fairly lighted, therefore, we generally cover the laurel leaves over with damp grass, to prevent anything like flame. These houses are very open, no glazed laps, and therefore smoking would be useless unless the glass was covered, and there is no covering so good or so economical as snow.

We know it is not common to fumigate trees when thus in a state of rest; but it takes little time, and prevention is better than cure. We might have used tobacco but for the price, and we have not yet tried any of that exempt from duty, but mixed with sulphur, as we do not know what quantity of sulphur may be in the mixture. Most likely such a mixture might be used safely for such trees and plants when in a state of rest if the wood were thoroughly ripened, and there had been no movement in the buds, as we have frequently used sulphur alone, covered-up with damp moss, to prevent it flaring; and for empty pits and houses such smoking is beneficial before cleaning and filling them afresh.

As stated, however, in answer to correspondents lately, *burning sulphur* with open flame, or flame smothered as above stated, will kill every green growing plant, and it will kill wood of a deciduous plant when in a state of complete rest, if the wood is not thoroughly ripened. The late Mr. Errington used it, mixed with sawdust, for vineries, &c.; but it should never be used by beginners, unless in empty houses and pits; for if the wood of Vines, even, is not thoroughly ripened, the burning sulphur will seize on every part at all green, and kill as far as it is green. We have had the bark of the young shoots of Peach trees affected by it in spots, when we thought the whole was sufficiently indurated to stand it; and though it did not injure the future swelling of the fruit, these shoots thus spotted we did our best to cut out and replace with fresh in the following season. In answer to "ALINA," then, we say, first, that we have not yet tried the Government-permitted tobacco mixture; secondly, that we should be chary of using it in houses at rest, unless where the wood of Vines was as hard and firm as the shoots of Oak trees; and thirdly, that for all green-leaved growing plants its use as smoke by burning would be ruinous, and that in proportion to the sulphur contained in it.

Were we much troubled with insects we would be inclined to try the strong tobacco water, advertised as manufactured from

untaxed tobacco. If sure that there was nothing in that but tobacco we should know what we were about, and we could make a smoking material from it, most likely much more cheaply than we could cultivate and preserve home-grown tobacco, for if not properly sweated and cured it is of little use for the destruction of insects. The worst that can be said against tobacco paper, much of which is very good, is that not knowing what it is made of, we are always somewhat uncertain as to "how" to use it. We have seen smokers from tobacco paper kill every insect and not injure a single leaf. We have seen it used with equal care, and if it did not kill the insects, it nearly destroyed the plants; hence the importance of prevention rather than cure. In all smokers of green growing plants two conditions are essential to safety and success; The leaves and stems of the plants should be dry, and the air confined also pretty dry, and the smoke must be cool. Hot tobacco smoke, however pure the tobacco, will injure any growing plant, and just in proportion to the heat and the vigour of the plant. As frequently observed, when plants are covered with insects it is lost labour in general for that time to waste tobacco on them. A smoking box is extremely useful and economical in most places. A few plants may thus be cleared as effectually by means of a pinch of tobacco as would have required ounces or pounds in large houses.

Where the spade would penetrate the ground—which it would easily do where the ground was carpeted with rough grass—no time could be better for collecting the soil for composts, border-making, and similar purposes. We shall be more particular in allowing our fruit trees to have the soil about them mostly, if not altogether, to themselves, when we become thoroughly convinced that many trees in small compass will yield a better and more interesting return than a few large trees, for which ladders and other appliances must be obtained to reach and gather the produce. As nothing can be produced beneath these trees, we trust the time is at hand when, if kept, they will be kept to themselves in the orchard, with long grass for the fruit to fall on, and be completely banished from the kitchen garden. Even dwarf fruit trees we would prefer to be planted in quarters or groups by themselves, and then they could be easily protected from frosts and their many enemies.

ORNAMENTAL DEPARTMENT.

Moving plants, potting, watering, cleaning, and placing soil over furnaces and in stoveholes to warm and mellow, formed our principal work, in order to be ready for many purposes as the weather improves; confining the potting and top-dressing as far as possible to the houses or the sheds adjacent, without taking the plants out of doors, as in general the wind was very cold for the degree of cold indicated by the thermometer.

Climbers and Twiners.—The dull weather has given us an opportunity for regulating these. A considerable uncertainty exists among amateurs as to cutting and pruning. In the great proportion of climbers the flowers are produced on young shoots of the current season's growth, as *Passifloras*, *Tecomas*, *Stephanotis*, and *Mandevillas*. In young plants, therefore, the aim should be to obtain one or more vigorous shoots, and to have these well ripened, and then by merely shortening these shoots a little, so as to remove the greenest part, the buds behind will break into shoots, and be flowering shoots just in proportion as the primary shoot was well ripened. Such climbers may therefore be treated as Vines bearing on the long-rod system, dispensing with all the small shoots and flowering part, and supplying with fresh rods every season. This, however, involves much trouble, and is chiefly useful to be followed until the plant has filled its place, and then it will be more easily managed on the one-main-shoot system—or rather principle—like a spurred Vine. Some of the finest *Passifloras* we ever saw were run as a main stem all the length of a house, and were thickly studded with flowering shoots hanging down all the way. These were cut back in winter, when more light was required, generally at twice, with an interval between the two operations, leaving only a bud or two at the base, next the main stem. Next spring the flowering shoots came again from these buds, just as in the case of the Vine, and the pruning and treatment were thus reduced to the least amount of trouble and supervision. In all cases free-flowering shoots can only be obtained from well-ripened wood.—R. F.

TRADE CATALOGUES RECEIVED.

James Carter & Co., 237, 238, and 261, High Holborn, London, W.C.—*Gardeners' and Farmer's Trade-Memoir*. Part I.—

Flower Seeds, Plants, and Bulbs. Part II.—Vegetable and Agricultural Seeds.

E. & T. Lant, 7, Easy Row, Broad Street, Birmingham.—
Descriptive Catalogue of Agricultural, Flower, and Vegetable Seeds.

COVENT GARDEN MARKET.—JANUARY 8.

ALTHOUGH the holidays may be considered as terminated, there is no revival of business, and the slight advance of last week has been barely maintained. French importations comprise Lettuces, Endive, and Asparagus.

		FRUIT.			
		s. d.	s. d.	s. d.	s. d.
Apples	½ sieve	2	6 to 4	Melons	each 2 0 to 3 0
Apricots	doz.	0	0 0 0	Nectarines	doz. 0 0 0 0
Cherries	lb.	0	0 0 0	Oranges	100 5 0 10 0
Chestnuts	bush.	0	0 14 0	Peaches	doz. 0 0 0 0
Currants	½ sieve	0	0 0 0	Pears (dessert) ..	doz. 2 0 4 0
Black	do.	0	0 0 0	Pine Apples	lb. 4 0 6 0
Figs	doz.	0	0 0 0	Plums	½ sieve 0 0 0 0
Filberts	lb.	1	0 0 0	Quinces	doz. 2 0 5 0
Cobs	lb.	1	0 0 0	Raspberries	lb. 0 0 0 6
Gooseberries ..	quart	0	0 0 0	Strawberries	lb. 0 0 0 0
Grapes, Hothouse ..	lb.	6	0 8 0	Walnuts	bush. 10 0 13 0
Lemons	100	8	0 12 0	do.	per 100 1 0 2 0

		VEGETABLES.			
		s. d.	s. d.	s. d.	s. d.
Artichokes	doz.	0	0 to 0	Leeks	bunch 0 3 to 0 0
Asparagus	100	6	0 10 0	Lettuces	per score 1 0 1 6
Beans, Kidney	100	0	0 3 0	Mushrooms	pottle 2 0 3 0
Beet, Red	doz.	2	0 3 0	Must. & Cress, punnet	0 2 0 0
Broccoli	bunch	0	6 1 6	Onions	per bushel 3 0 5 0
Brus, Sprouts ½ sieve		2	0 2 6	Parsley	per sieve 4 0 5 6
Cabbage	doz.	1	4 2 0	Parsnips	doz. 0 9 1 0
Capsicums	100	0	0 0 0	Potatoes	bushel 4 6 5 6
Carrots	bunch	0	6 0 8	Kidney	do. 4 0 6 6
Cauliflower	doz.	3	0 6 0	Radishes doz. bunches	1 0 1 0
Celery	bunch	1	6 2 0	Rhubarb	bundle 0 9 1 0
Cucumbers	each	1	0 2 0	Savory	doz. 1 0 2 0
Endive	doz.	1	0 0 0	Sea-kale	basket 2 0 3 0
Fennel	bunch	0	3 0 0	Shallots	lb. 0 8 0 0
Garlic	lb.	0	8 0 0	Spinach	bushel 4 0 5 6
Herbs	bunch	0	3 0 0	Tomatoes	per doz. 0 0 0 0
Horseradish ..	bundle	2	6 4 0	Turnips	bunch 0 4 0 6

TO CORRESPONDENTS.

BOOKS (*An Inquirer*).—A volume with numerous plans of gardens, small and large, will be published at this office early in this year.

RAIN WATER FROM ASPHALTED ROOF (*G. E.*).—We would not like, for watering plants, the water that came from an asphalt roof for at least six months after it was laid down. After that, if the surface of the asphalt was roughened with sand or gravel, our observation would lead to the conclusion that the water would be pure enough.

VINES IN AN INTERMEDIATE HOUSE (*A Subscriber*).—It will do no harm to Vines to be kept in a house all the winter where fire heat is used, provided that fire heat does not raise the temperature of the house more than from 40° to 45°. In an intermediate house, where from 45° to 55° of temperature is maintained, the Vines should be brought to the front of the house, and there managed so as to secure a lower temperature whilst in a state of rest. If the Vines, so healthy-looking, showed no fruit, we fear that merely grafting them would be of no use, unless they were some kinds of foreign origin that do not thrive under glass. We suspect your Vine wood has not been sufficiently ripened.

STRAWBERRY—VINERY (*Half-pay*).—For a sure and plentiful-bearing Strawberry, there is none to beat Keen's Seedling. Six Vines are quite enough for your 15-foot-long house. Your Vines are weak; but if they have commenced rooting pretty well, and if the kinds are suitable, we would try them another year, cutting them as far back as would be convenient, just a little above a bud, and allowing only one shoot to come next season, fastening it carefully as it grows. As you describe the young growth to have made a head like a Currant tree, we presume from this that the roots have made some progress, and that therefore the Vine will come stronger next season when the strength is thrown into one shoot. As you say you know nothing of pruning, we have given the above advice to cut down to the lowest convenient part of last year's wood, take only one shoot from a Vine, and train that without stopping it until it almost extends the length of the roof. As it grows, subsidiary shoots will come from each joint; stop these when two leaves appear, and allow them to remain until September, then cut them all off, and stop the point of the main shoot. Keep the house dry and warm to encourage the hardening of the wood, and next winter, or by this time, prune back your Vines, leaving from 1 to 2 or more feet, according to strength. If strong, the Vines may bear from one to two or three bunches in the following season. The leading shoot must be grown and treated as last season, and the shoots that come from the buds beneath the top one should be stopped a joint or two beyond the fruit, and, at any rate, at the fifth or sixth joint. By that time, if you are not well acquainted with them, we will enter into all the details of pruning, according to the system adopted. If you prefer stronger Vines to plant, you might take up the present ones and pot them; but the new Vines you would also have to cut back, and they might not do much better than those you have, if the roots are in good condition, as, in this respect, they will have an advantage over fresh-planted ones now. If so weak as you say, you could obtain nothing from them in the way of fruit next summer. After potting you would have to cut them down to the surface of the soil, and grow a shoot or shoots from them, which, if well ripened and well grown, would fruit in another year. You do not tell us where the 2-foot border in this 15-foot-long house is placed. If against the back wall a Peach

tree might certainly be planted there, and all the better if you could raise and place good soil under the flagstone; but unless you had a large tree that would fruit quickly, it would be of little use planting one or two young trees, as with six Vines up the glass in front, the shade would be so dense that nothing would thrive well under it. If you wished variety, instead of planting out, we would have Peaches and Nectarines, and even a Fig tree or two in pots, if you like Figs. They would come in early, be set before the Vines wanted much heat, and then when the fruit was gathered the plants could be set out of doors to obtain all the light possible in the autumn. You would find much to suit you in the "Vine Manual," which may be had from our office, free by post, for thirty-two postage stamps. We have forgotten to say that if, as we suppose, your Vine roots are out of doors, you should protect them from frost and much wet in winter.

HEATING A TANK (*A Novice*).—See what is said to-day in answer to "HALF-PAY" as to heating a small tank from the pipes in a hothouse. Your tank is smaller, 6 feet by 2½ feet, but 6 inches deep—just double what is necessary. You do not tell us how you heat your greenhouse, and, of course, you could heat your tank from a boiler heated by fuel, as you say; but it seems a large amount of work to have a boiler for such a small affair, though, in our opinion, if the tank is secure, it matters but little whether you have water in it, or pipes passing through water. If your house is heated from a boiler you could do as "HALF-PAY" has done, take a pipe from the pipes in the house. There is this objection to the plan, that you cannot have heat in the tank without heating the house, whilst you might want heat there when no artificial heat was needed in the house. Under such circumstances small propagating tanks or cases in a greenhouse or living room are best heated separately by gas, or a lamp, the heat passing through the water in pipes; or, simpler still, by having the tank about 2 inches deep, a plug or tap at one end, and an opening or funnel at the other, and removing cold water and replenishing with hot as necessary. A supply of hot water by means of the garden pail once in twenty-four hours, and twice in very cold weather, if hot water can be easily had, would cost less trouble than having anything in the way of a separate boiler and means of heating. We have found water, when surrounded outside with wool, keep warm frequently for thirty hours.

TANK NOT HEATING (*W. A. O.*).—If you had shut-in 6 feet of your flow pipe you might have had enough of heat for your purpose. We understand exactly about the tank you have cast, which is 6 feet long, 4 feet wide, and 3 inches deep, and which you have connected with the flow and return pipes in the house by means of a 1-inch lead pipe; but we cannot be sure why, though the main pipes in the house are so hot you can scarcely touch them, you have little heat in the tank, unless it is that the tank is not placed right as respects its level with the flow pipe. There will be a circulation if the tank is on the level of the top pipe; but if other arrangements will permit of it, the hot water will circulate much better if the bottom of the tank is at least as high as the top of the flow pipe. That elevation secured, we would let the small pipe from the flow enter at one end, and the return be connected with the return at the other end of the tank. If these connecting pipes are straight, without bends, it will be all plain sailing, and work they must. We lay all the more stress on this fact, because in several cases in our own practice, when connecting such a tank to a higher level, with a flow 4-inch pipe beneath it, and to suit convenience we had bent the small connecting pipe a little in form of the letter S, we found at times air accumulated at the bends, and impeding the circulation. A small air pipe inserted in the bend, rising above the level of the tank, settled the matter, and if not so soon as we wished, we had only to blow down to obtain a very rapid circulation of the water, so that the water in the tank and the water in the pipes was soon at the same heat. We say this much as respects level, because the other day a tank, formed at some expense, could not be heated, as it was below the level of the flow pipe, from which the heat was to be borrowed.

LILIUM ACRATUM (*Idem*).—The numerous small bulbs left after the decay of the old bulbs, are something to be thankful for. Your treatment seems to have been quite correct. Too much damp after the bulb is ripe will sometimes accelerate such decay, and cause the bulb in natural defence to put forth its last energies in a brood of young bulbs.

MANDARIN ORANGE (*Idem*).—We would grow it in good brown fibry loam, with a fourth part of rotten dunghy, fibry heath mould, and a little silver sand. We would merely stop the strong shoots, and if the others are very thick thin them a little; but in most cases, if the shoots are regular, and light and air can reach them, they will need little to be done to them.

POTTED RHODODENDRONS (*Idem*).—They should be encouraged to grow freely when done flowering, and until the buds are set for blooming, and then when potting is needed they should be repotted, giving small shifts, and so that the new soil may be well filled with roots before winter.

PRUNING MANDEVILLA SCATEOLENS (*Idem*).—The straggling shoots may be pruned in now. If used to it, the plant may be pruned like a Vine on the spur system. If not used to it, and you have some good long shoots, leave them to break all over, like a Vine on the rod system. See "Doings of the Last Week."

VARIOUS (*A Subscriber from the First*).—"The Florist and Pomologist" begins a new volume this month—January. You might grow a Royal Ascending or a Black Hamburgh Vine in your narrow cold pit; but you would not do so well with the Alicante. There are not many of the small gardens given in the "Horticultural Directory," unless distinguished for something particular. The number given will, no doubt, be increased every year; but to give every garden would require a very large volume, and then few would care about it.

VENTILATING AN ORCHARD HOUSE (*A Subscriber*).—For an orchard house, 36-feet in length by 24 feet in width, span-roofed, with side ventilation, an opening at each end beneath the apex would be enough. For a greenhouse or forcing house, the roof ventilation would be best secured by having a double ridge board, with a space of 9 to 12 inches between the boards for wooden ventilators hung on pivots, and with that space covered with a cowl of boards outside to let in the air and keep out the wet. These ventilators will be easily managed from the path in the centre of the house. If the path is not in the middle, then it would be better to have two openings to slide, besides the openings at the ends.

SPOTS ON TRICOLORED PELARGONIUMS (*St. Dennis*).—They probably have been kept too cold and too damp. More heat, more ventilation, and

less water will, probably, restore them. Comtesse de Jaucourt is a very superior loss.

NEW ZEALAND LAUREL (G. N.).—It is the *Corynocarpus levigatus*, and is thus mentioned in the "Treasury of Botany." The tree, according to Dr. Bennett, is valued in New Zealand for the sake of its fruit and seeds; the former is of the size of a Plum, pulpy in the interior and sweet. The seeds are used in times of scarcity, and contain a tasteless farinaceous substance. The raw seeds, however, are poisonous, and produce spasmodic pains, giddiness, and partial paralysis; to obviate which effects they are steamed for twenty-four hours, and then either buried in the ground, or allowed to soak in water for some days.

TYING-IN STRAGGLING CYPRUS TREES (J. T.).—We should try to tie-in the branches displaced by the snow storms of the winters of 1865 and 1866. We would use strongtarred rope, equal in thickness to the branches to be tied; and if the tying be done effectually the branches will, probably, recover their erect and proper position in the course of a few years. The tarred rope will last a long time, but it may be necessary to renew it in order to keep the straggling branches in their proper position. If you can remove them without making gaps, that will be the most certain mode of securing the symmetrical character of the trees; but we fear you cannot do so without disfiguring the latter for a long time. It is well to do without tying if you can.

VALLOTA PURPUREA POTTING (J. Luck).—You may pot it if necessary, but it is well not to overpot, as it flowers more freely when its roots are confined than when overpotted. The drainage should be good, and therefore the plant should be turned out of its pot and the drainage made good, placing in a larger pot if the roots are very much matted. Loosen the ball, and remove as much of the old soil as possible, but be careful not to injure the roots. If the plant has very few roots shake away all the old soil, and place it in a pot twice the diameter of the bulb, for that size is sufficient. If you have more than one bulb in a pot, the pot may be larger in proportion. The book you name is a good one, but not the best.

CROCUSES EATEN BY MICE (J. F. C.).—We think that the mice eating the Crocuses in the beds and leaving those in pots untouched, is attributable to the former not being planted so deeply as the latter, and being, therefore, more easily attacked. When the mice have devoured those in the beds they will find out those planted more deeply. We are not aware that mice devour the foliage; but they will, probably, attack the bulbs in pots as soon as it appears above ground, if not before. You may trap them with a figure-1 trap, baited with the half of a Crocus bulb, or a whole small one.

MEALY BUG ON VINES (J. Z.).—We would remove all the loose bark, especially that on the spurs, and it may be done quite down to the wood. Under the old bark you will find the insects in greater numbers than you supposed. There they lurk until forcing is commenced. Any dressing of the Vines will be of little or no avail, because it cannot reach the bugs unless the loose bark be taken off. After clearing the Vines well of loose bark you may wash them thoroughly with water at 140°, and afterwards paint them with a solution of Gishurst Compound at the rate of 8 ozs. to the gallon of water. This strength will not injure the buds if you only apply it before they begin to swell. The Vines should be washed with a paint brush, and the solution of Gishurst applied with the same, rubbing it well into every crevice.

CINERARIAS LOSING THEIR FLOWER STEMS (Idem).—We are unable to assign a reason for the stems dying off. Probably their being eaten by some insect is a cause for it; but we are not able to form an opinion with so little knowledge of the treatment the plants have received. There must be some cause of the decay at the surface of the soil. Appleby's "Orchid Manual" will suit you. You can have it free by post from our office by enclosing thirty-two stamps with your address.

GARDENERS' EXAMINATIONS (Idem).—Write to Mr. Richards, Assistant Secretary, Royal Horticultural Society's Garden, South Kensington, London, W.

ORCHIDS (J. Query).—Of the list of Orchids sent the following would succeed in a greenhouse with a temperature of 50° in winter, a corresponding heat being given during the summer, with a moderately close and humid atmosphere: *Oncidium ornithorhynchum*, *O. leucociliatum*, *O. crispum*, and *O. pulvinatum*; *Odontoglossum grande*, *O. citrosum*, *O. pulchellum*, and *O. maculatum*; *Trichopilia tortilis*; *Epidendrum vitellinum*, *E. aromaticum*, and *E. macrochilum album*; *Brassavola glauca*; *Cattleya citrina*; *Lælia albida*, *L. acuminata*, and *L. furfuracea*; *Lycaste*

Skinneri, and *L. aromatica*; *Sophronis cernua*; *Acineta Humboldtii* and *Barkeria Lindleyana*. All these we have grown in a cool house, 5° lower than the temperature you name. The others named we have tried to some extent, but they do not succeed. They require a stove temperature.

POTTING CYCLAMENS (Calcevia).—Seedling bulbs of Cyclamens may be potted at this season, especially if of the persicum race, and they are not expected to bloom before February. It is a good practice to adopt with growing, but not blooming, plants of Cyclamen persicum, especially when a late bloom and extra-sized plants are required, the potted being carefully performed without disturbing the ball. Other Cyclamens do best if placed in their blooming pots before, or when they are beginning to grow. Disturbing them in any way when showing for bloom is bad, as it more or less disarranges the foliage.

SELAGINELLA OFFSETS (Idem).—You could not have adopted a better plan, and there is every reason to conclude they will do well. Do not keep the soil very wet, but let it be moist, and admit a little air every day, but without reducing the moisture and temperature so much as to cause them to flag. When they become rooted they will succeed in a night temperature of 50°.

SELECT CAMELLIAS (W. G. G.).—Marie Morren, Queen of Beauties, Story, Rubens, Fimbriata, Alba plena, Bénédict, Mathotiana, Jenny Lind, Mrs. Cope, Giovanni Santarelli, and Carlotta Papudoff. We are not aware that grafting Camellias on Orange and Lemon stocks has been practised, and we do not think they would succeed. It is a matter for experiment.

VINE FIBRES DECAYED (J. R. B.).—The roots sent have many of the fibres quite dead, and, we think, owing to the unsuitable materials of which the border is composed, which cannot be otherwise than too close and retentive of moisture. Being principally clay, it has settled into a close wet mass, which, instead of improving, must get worse, there being nothing to keep it open but the lime rubbish and bones. We cannot understand how any one can be so stupid as to endeavour to drain a Vine border by putting rubble over the bottom, and then concreting upon the rubble. How is the water to pass away? It is only making a receptacle for water to lodge in. The concrete ought to have been at the bottom of the border to prevent the roots going down, and then the rubble 9 inches thick, with a drain at the lowest point to carry off any accumulation of water; but as it is, the water cannot pass through the concrete into the rubble and to the drain. The concrete where it is, is worse than if the border had not been drained and no rubble put in. Clay is a bad material to form a Vine border of. A little marl may do good; but clay should be avoided. Good turf, cut 2½ or 3 inches thick from a pasture where the soil is a light rather than heavy loam, is best for Vine borders. We do not wonder at the fibres decaying; it is only what might be looked for.

CLIMBERS FOR STOVE (Idem).—*Allamanda grandiflora*, A. Schottii, *Thunbergia Harrisii*, *Manettia micans*, *Hoya carnea*, *Clerodendron Thomsonii*, *Bignonia grandiflora*, *Combretum purpureum*, *Passiflora quadrangularis*, and *Stephanotis floribunda*. The wall must not be shaded by plants or by climbers on the roof, otherwise they will not succeed.

APPLES FOR ESPALIERS (A. F. P.).—Ashmead's Kernel, Cockle Pippin, Cornish Gilliflower, Cox's Orange Pippin, Downton Pippin, Kerry Pippin, Margil, Nonpareil, Pitmaston Nonpareil, Scarlet Nonpareil, Sturmer Pippin, and Jonanetting.

NAMES OF FRUIT (J. D.).—Apples: 1, Colonel Vaughan's; 4, Court Pendu-Plat; 5, Lemon Pippin; 6, Winter Greening; 8, Winter Pearmain, or Duck's-bill; 9, Braddick's Nonpareil. (*J. W. juv.*)—1, Spencer's Seedling, is a local variety; 2, Minchall Crab; 3, Nelson Codlin. (*J. F. Lombard, Dublin*).—Your Apple is *Cambusnethan Pippin*.

NAMES OF PLANTS (T. Brown).—*Gnaphalium arenaria*. (*S.*)—1, *Euphorbia apocynifolia* (?); 2, *Euphorbia jacquiniiflora*; 3, The leaf appears to be that of *Commelyna* or *Aneilema*. (*R. F.*)—1, *Adiantum formosum*; 2, *Aspidium aculeatum*; 3, *Cornella pentaphylla*; 4, *Ageratum conyzoides*; 5, *Acacia cæsia*, var. (*J. T.*)—1, *Eranthemum sanguinolentum*; 2, *Chamaeranthemum Williamsii*, var. (*T. H.*)—1, *Justicia (Bellia) ussurgens*; 2, *Acanthaceae*, but not possible to determine without a flower. (*Jas. Luck*)—1, 2, *Aspidium aculeatum*, var.; 3, *Asplenium Filix-femina*, var.; 4, *Aspidium aculeatum*, var.; 5, *Lastrea Filix-mas*; 6, *Aspidium leucitis*. N.B.—Several of these are barren and in a young state, so that the variety cannot be determined.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending January 7th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 1	30.134	30.100	32	26	40	40	N.E.	.00	Overcast; frosty; overcast; brisk wind.
Thurs. . 2	30.188	30.150	32	19	39	39	N.E.	.00	Overcast with light clouds; fine; densely overcast, snowing.
Fri. . . 3	30.150	30.036	31	25	39	39	N.	.00	Densely overcast; fine with sunshine; overcast.
Sat. . . 4	29.976	29.918	34	25	38	38	N.E.	.00	Overcast, slight fog; densely overcast, sleet; overcast.
Sun. . . 5	29.966	29.888	34	31	38	38	N.E.	.00	Overcast, hazy; overcast; densely overcast.
Mon. . . 6	29.880	29.812	35	25	39	38	N.E.	.00	Slight fall of snow, overcast; overcast; thawing.
Tues. . 7	30.000	29.950	35	25	38	38	N.E.	.00	Densely overcast, frosty; fine with sunshine; snowing.
Mean	30.042	30.079	33.71	25.14	38.71	38.57	..	0.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

SOMERSET COUNTY POULTRY SHOW.

It is very rarely indeed that we have to record the holding of so excellent a first Show of Poultry and Pigeons as that which took place

on the 1st, 2nd, and 3rd of January at Weston-super-Mare. The general arrangements, however, betrayed great inexperience in the management of a public Poultry Show, and, from the fact of the prize list reaching our reporter at so late an hour, we can do little more than simply record the returns, though we have corrected the list, as printed by the Weston-super-Mare Committee, by the award book of one of the Judges. We deeply regret there should have been any hitch of the kind, as the Show was unquestionably one of first-rate

character, and we most sincerely hope the experience of another year may prevent the like again occurring.

SPANISH.—First, H. Lane, Ashley Road, Bristol. Second, E. Jones, Clifton, Bristol. Third, W. Bone, Park Street, Bristol. Highly Commended, A. Heath, Calne. *Chickens*.—First and Cup, also the ten guinea Cup for the best pen of Poultry in the Exhibition, F. James. Second, J. Newton, Silsden, Leeds. Third, H. Lane. Highly Commended, Hon. Miss Douglas Pennant, Penrhyn Castle, Bangor; A. Heath; T. Bainfield, Braddon Hill, Bristol. Commended, E. Jones. *Cock*.—First and Second, Withheld. Third, W. Smith, Weston-super-Mare. *Cockerel*.—First and Cup for best single Cock or Cockerel in the Exhibition, E. Jones. Second and Third, A. Jones, Stapleton, Bristol. Commended, A. Jones; Hon. Miss Douglas Pennant; T. Bainfield.

DORKINGS (Coloured).—First, D. C. Campbell, M.D., Brentwood. Second, L. Patton, Comestrowe House, Taunton. Third, Mrs. F. S. Arkwright, Etwell Hall, Derby. *Chickens*.—First, Cup, and Second, Mrs. F. S. Arkwright. Third, D. C. Campbell, M.D. Highly Commended, L. Patton; C. Cork, New Shoreham; Miss A. Wilcox, Nailsea Court, Bristol. Commended, Lieut.-Col. H. B. Lane, Bracknell.

DORKINGS (White).—First, Rev. G. F. Hodson, North Petherton. Second, Mrs. Hartwell, Penleaz, Bridgewater. Third, T. P. Edwards, Lyndhurst, Hants.

DORKINGS (Any variety).—*Cock*.—First, Withheld. Second, L. Patton. Third, H. Walker, Shenfield, Brentwood. *Cockerel*.—First, Lady M. Macdonald, Woolver, Liphook. Second and Third, L. Patton.

COCHINS (Cinnamon and Buff).—First and Cup, H. Mapplebeck, Woodfield, Moseley, Birmingham. Second, W. A. Taylor, Turner Street, Manchester. Third, R. White, Broadhall Park, Sheffield. Highly Commended, J. H. Dawes, Moseley Hall, Birmingham.

COCHINS (Partridge and Brown).—First, E. Tadmam, Whitechurch, Salop (Partridge). Second, T. M. Derry, Geduey, Lincoln. Third, A. O. Worthington, Newton Park, Burton-on-Trent.

COCHINS (White).—First and Second, R. Chase, Balsall Heath Birmingham. Third, F. J. Shortis, Flax Bourton, Somersetshire.

COCHINS (Any variety).—First and Second, H. Mapplebeck (Buff). Third, E. Tadmam (Partridge). Highly Commended, W. A. Taylor; J. H. Dawes (Buff). Commended, Hon. Miss Douglas Pennant (Buff); A. F. Worthington (White). *Cock*.—First, R. White (Buff). Second, Withheld. Third, C. J. Lambert, Kingswood, Bristol (Partridge). *Cockerel*.—First, Mrs. H. Dean, Upton, Southam, Warwick (White). Second, Miss J. Milward, Newton St. Loe, Bristol. Third, H. Mapplebeck (Buff).

BRAMA POOTRA (Dark).—First and Cup, R. W. Boyle, Galtrim House, Bray, Co. Wicklow. Second, H. Lucy, Hebdon Bridge. Third, Mrs. A. Hurt. Highly Commended, F. Crook, Forest Hill, London. *Chickens*.—First, Lieut.-Col. H. B. Lane. Second, R. W. Boyle. Third, Mrs. A. Hurt, Alderwasley, Derby. Commended, Miss H. Attye, Ingon Grange, Stratford-on-Avon; L. Wright, Southwell Street, Bristol.

BRAMA POOTRA (Light).—First, H. Dowsett, Pleshey, Chelmsford. Second, Miss Harvey, Salisbury, Southampton. Third, H. Lucy. *Chickens*.—First and Third, J. Pares, Postford, Guildford. Second, A. Herbert, Eglau. Highly Commended, A. Herbert; H. M. Maynard, Holmwood, Isle of Wight. Commended, A. Herbert.

BRAMA POOTRA (Any variety).—*Cock*.—First, R. W. Boyle. Second, J. Hinton, Hinton, near Bath. Third, S. Felgate, St. Margaret's, Ipswich. *Cockerel*.—First, R. W. Boyle. Second, C. Crook (Dark). Third, J. K. Fowler, Aylesbury. Highly Commended, L. Wright.

GAME (Black-breasted and other Red).—First and Cup, J. Fletcher, Stoneclogh, Manchester (Black Red). Second, E. Aykroyd, Bradford (Red). Third, W. Boyes, Beverley (Red). Highly Commended, Rev. G. S. Cruwys, Cruwys Morbard Court, Tiverton; S. Dupe, Evercreech, Bath; Rev. J. Mellor, Colwick Rectory, Notts (Black Red).

GAME (Duckings and other Greys and Blues).—First, J. Fletcher (Duckings). Second, W. Dale, Weston-super-Mare. Third, S. Dupe. Commended, A. K. Briggs, Bradford.

GAME (Any other variety).—First, J. Fletcher (Piles). Second, S. Matthews, Stowmarket (Piles). Third, J. Vincent, Bromyard (Black).

GAME (Any variety).—*Chickens*.—First, J. Fletcher (Black Red). Second, A. M. Forde, Castle Cary. Third, W. Slagg, Netheravon, Pewsey (Black Red). Highly Commended, J. Fletcher (Black Red); S. Matthews (Black Red). Commended, W. W. Pyne, South Lancing, Sussex. *Hen*.—First, J. H. Williams, Spring Bank, Welshpool (Black Red). Second, W. H. Slagg (Black Red). Third, S. Dupe. Highly Commended, E. Aykroyd; J. Vincent; G. Clements, Birmingham. *Cock*.—First, J. Fletcher (Black Red). Second, Rev. J. W. Mellor. Third, W. H. Slagg. *Cockerel*.—First, A. K. Briggs. Second and Third, G. Clements.

HAMBURGS (Golden-pencilled).—First, H. Beldon, Gt. Stock, Bingley. Second, F. Pittis, Newport, Isle of Wight. Third, Mrs. Farquharson, Wyck Hall, Stow-in-the-wood. Highly Commended, H. Pickles, jun., Earby, Skipton.

HAMBURGS (Silver-pencilled).—First, H. Beldon. Second, J. Preston, Ollerton, Bradford. Third, W. Bairstow, Fearncliffe, Bingley.

HAMBURGS (Golden-spangled).—First and Cup, H. Beldon. Second, T. Wrigley. Third, W. Hyde, Hurst, Ashton-under-Lyne. Highly Commended, J. Ogden, Hollingwood, Manchester; T. Walker, jun., Denton, Manchester; G. Walters, Worcester. Commended, H. Pickles.

HAMBURGS (Silver-spangled).—First, H. Beldon. Second, H. Pickles. Third, G. Walters.

HAMBURGS (Black).—First and Second, T. Wrigley, jun., Tonge, Middleton, Manchester. Third, H. Beldon. Highly Commended, G. Lingard, Snow Hill, Birmingham.

HAMBURGS (Any variety).—*Cock*.—First, J. Fielding, Newchurch, near Manchester (Silver-spangled). Second, H. Beldon. Third, F. Pittis. Highly Commended, W. A. Hyde (Golden-spangled).

POLANDS (White-crested Black).—First and Second, T. P. Edwards. Third, P. Unsworth, Loughton, Newton-le-Willows. Highly Commended, H. M. Maynard.

POLANDS (Gold or Silver).—First, H. Beldon. Second, J. Hinton. Third, P. Unsworth.

POLANDS (Any variety).—*Cock*.—First, H. Beldon. Second, J. Hinton (Silver).

FRENCH (Any variety).—First, Col. Stuart Wortley, Grove End Road, London (French). Second, F. H. Wyndham, Ufford Cottage, Salisbury (Crested Grey). Third, H. M. Maynard, Hordans. *Cock*.—First and Second, Col. Stuart Wortley (French). Third, Rev. N. V. Kidley, Newbury. Highly Commended, J. K. Fowler (Grey Cuck).

ANY OTHER DISTINCT VARIETY.—First, R. Loft, Woodmansey, Beverley;

Rev. A. G. Brooke, Ruyton XI Towns, Salop (Malay). Second, J. R. Jessop, Hull (Negroes); H. J. Godfrey, Hammersmith (Black Shanghaes). Third, F. Pittis; H. Leworthy, Newport, Barnstable (White Minorca). Fourth, Col. Stuart Wortley (Frizzled Japanese); Miss S. H. Northcote, Upton Pynes, Exeter (White Spanish); Highly Commended, S. A. Wyllie, East Moulsey, Surrey (Japanese); J. K. Fowler (Japanese Silkies); Mrs. A. Tuckett, Shirehampton, Bristol. Commended, Mrs. E. Llewellyn, Colman, Glamorganshire; Mrs. H. Dean (Cuckoo Dorking); J. Hinton (Malay); W. P. Hadden, West Town, Bristol; H. Leworthy (Anconas).

GAME BANTAMS (Black or Brown Reds).—First, Rev. A. K. Cornwall, Bencombe, Dursley, Gloucestershire (Black Reds). Second, O. Drewry, M.D., Walsall. Third, H. Shumack, Southwell, Notts. Highly Commended, Rev. W. J. Mellor (Black Reds); J. Crossland, jun., Wakefield; J. W. Kellaway, Merston, Isle of Wight. Commended, J. J. Cousins, Allerton Park, Leeds.

GAME BANTAMS (Duckwing, or any other variety).—First, F. Pittis (Duckwing). Second, H. Shumack (Game). Third, F. R. Prideaux, Bridgewater (Duckwing). Highly Commended, H. Lee, Appuldurcombe, Isle of Wight (Piles).

BANTAMS (Gold or Silver Sebright).—First, Rev. G. F. Hodson (Sebright). Second, Third, and Highly Commended, Rev. G. S. Cruwys (Sebright).

BANTAMS (Black, White, or any other variety).—First and Highly Commended, Messrs. Tonkin & Turkey, Bristol (Black). Second, H. M. Maynard. Third, Rev. P. W. Story, Churwellton House, near Daventry (White-fetched-legged). Commended, Rev. G. S. Cruwys (Black and White).

BANTAMS (Any variety).—*Cock*.—First, Rev. W. J. Mellor. Second, Countess of Ailesford, The Bury, Leamington Spa (Japanese). Third, W. Dale, Weston-super-Mare (Black Red).

ANY VARIETY OF CROSS-BRED For Cottagers only. —First and Third, J. Cox, Berrington, near Bristol (Dorking). Second, G. D. Whereat, Weston-super-Mare (Spanish Game).

DUCKS (Ayle-bury).—First and Second, H. Jones, Dinton, Aylesbury. Third, J. K. Fowler, highly Commended, W. Pares, Ockbrook, near Derby. Lieut.-Col. H. B. Lane.

DUCKS (Rouen).—First and Second, L. Patton. Third, G. N. Hulbert, Perrott Brook, Cirencester. Highly Commended, G. N. Hulbert; S. H. Stott, Quarry Hill, Rochdale; J. K. Fowler. Commended, Mrs. N. Grenville, Butleigh Court, Glastonbury.

DUCKS (Any other variety).—First and Second, Clifton Zoological Society (Carolina and Mandarin). Third, F. Pittis (Black East Indian).

GRESE (Any variety).—First, J. K. Fowler (Toulouse). Second, S. H. Stott (White). Third, Lady M. Macdonald (Toulouse). Highly Commended, G. S. Hockey, Durham Down, Bristol (Chinese Swan); L. Patton (White); E. Hodge, Hutton Court, Weston-super-Mare (Grey); S. H. Scott (Grey); J. Coles, Manor House, Worle, Weston-super-Mare (Grey); Lady M. Macdonald (Toulouse).

TURKEYS (Any variety).—First, Rev. W. J. Mellor. Second, Lady M. Macdonald (Cambridge). Third, L. Patton. Highly Commended, Mrs. Dunn, Inglewood, Hungerford (Copper); R. Stubbs, Cliff Court, Frenshay, Bristol (Norfolk). Commended, L. Patton (Cambridge); Mrs. Dunn.

SELLING CLASS (Any variety).—First, R. W. Bechey, Kingskerswell, Newton Abbot (Dorking). Second, J. Hinton (Polands). Third, A. M. Forde (Hondons). Highly Commended, Hon. Mrs. Sugden, Wells (Buff Cochins). Commended, H. M. Maynard (Hondaus); Hon. Mrs. Sugden (Buff Cochins); G. Walters.

PIGEONS.

CARRIERS (Any colour).—First, H. Yardley, Market Hall, Birmingham. Second, G. S. Hockey, Durham Down, Bristol (Dun). Commended, E. M. Watson, Worle, Weston-super-Mare (Black); J. E. Brevard, Coventry.

POUTERS (Any colour).—First, Second, and Highly Commended, A. Heath (White). Commended, C. Bulpin, River-side, Bridgewater; J. E. Brevard, Coventry.

TEMBLERS (Almond).—First and Cup, A. Key. Second, J. Fielding, jun., Lark Hill House, Rochdale. Highly Commended, J. E. Brevard.

TEMBLERS (Any variety except Almond).—First, A. Heath (Blue Beards). Second, W. Edge, Charlotte Street, Birmingham.

RUNTS.—First, H. Yardley. Second, Countess of Aylesford.

JACOBS (Any colour).—First and Second, C. Bulpin. Highly Commended, J. Thompson, Bingley. Commended, Miss J. Milward.

FANTAILS (Any colour).—First, H. Yardley. Second, Rev. W. S. Shaw, Bath. Commended, C. Bulpin; H. M. Maynard (White); J. Percival.

TATTLERS (Any colour).—First, J. H. Thompson. Second, Rev. W. J. Mellor. Highly Commended, C. Bulpin.

OWLS (Any colour).—First, J. Fielding, jun. Second, J. W. Edge. *Ness*.—First, C. Bulpin. Second, Rev. A. G. Brooke. Commended, J. Thompson.

TRITTES (Any colour).—First, H. Mapplebeck (Yellow). Second, C. Bulpin. Highly Commended, C. Bulpin; W. S. Loder, Bathwick, Bath. Commended, J. Thompson.

BARNS (Any colour).—First, Rev. W. J. Mellor. Second, H. M. Maynard (Black). Commended, J. Fielding, jun.

DRAGONS (Any colour).—First, J. Percival. Second and Highly Commended, C. Bulpin. Commended, H. M. Maynard (Blue).

ANY OTHER DISTINCT VARIETY.—First and Second, W. S. Loder (Archangels and Germans). Highly Commended, C. Bulpin; W. S. Loder (Fec); H. M. Maynard (Urd Ice); J. Percival (Grimshaws); F. Pittis (Black Magpies); F. Broomel, Camden Town, London (Fringillacks and Monks).

The Judges of Poultry were, Mr. Hewitt, of Birmingham, and Mr. Teebay, of Preston; and of Pigeons, Mr. W. B. Tegetmeier, of London.

WENTWORTH POULTRY SHOW.

The fourth Exhibition took place in the Riding School, Wentworth Woodhouse, near Rotherham, on December 30th and 31st. Nearly two hundred pens were exhibited, consisting, except in the Selling and Unadjudged Game cock classes, exclusively of birds of 1867.

DORKINGS (Grey).—First and Second, Hon. W. H. W. Fitzwilliam, Wentworth Woodhouse. Highly Commended, J. White, Warley; Hon. W. H. W. Fitzwilliam.

DORKINGS (Any other variety).—First, J. Stott, Healey, near Rochdale (Silver-Grey). Second, Rev. T. O'Grady, Hognaston Vicarage, Ashbourne (Silver-Grey). Highly Commended, H. Saville, Rufford Abbey, Ollerton (White).

COCHINS—First, C. Sidgwick, Riddlesden Hall, Keighley. Second, Hon. Miss Douglas Pennant, Penrhyn Castle, Bangor.

BRAMMAS—First, Hon. Miss Douglas Pennant. Second, H. Lacy, Heblen Bridge. Highly Commended, M. Brooksbank, Manchester; H. Lacy. Commended, C. Eastwood, Biddwell.

SPANISH—First, E. Comber, Middleton Hall, Warrington. Second, Messrs. Burch & Boulter, Sheffield. Highly Commended, J. Thresh, Bradford.

GAME (Reds)—First and Second, C. Chaloner, Workson. Highly Commended, W. Needham, Dartfield, Barnsley; C. E. Rhodes, Rotherham.

GAME (Any other variety)—First, Rev. T. O'Grady (Duckwing). Second, W. J. Cope, Barnsley (Duckwing). Highly Commended, E. Hall, Brimington, Chesterfield (Duckwing).

HAMBURGS (Silver-pencilled)—First, Messrs. W. & J. Bairstow, Fearncliffe, Bingley. Second, W. Harvey, Sheffield.

HAMBURGS (Golden-pencilled)—First, W. Harvey. Second, Messrs. Burch & Boulter. Highly Commended, T. Wrigley, jun., Middleton, Manchester.

HAMBURGS (Silver-spangled)—First, Messrs. S. & R. Ashton, Mottram, Second, Hon. W. C. W. Fitzwilliam, Wentworth Woodhouse.

HAMBURGS (Golden-spangled)—First, G. Haigh, Ogley Green, Holmfirth. Second, T. Walker. Highly Commended, W. A. Hyde, Hurst, Ashton-under-Lyne; W. Wood, Walkley, Sheffield. Commended, Miss M. Burch.

POLISH—First, Mrs. Proctor, Hull. Second, J. Battye, Hill House, Huddersfield (White-crested Black). Highly Commended, W. Harvey (Silver and Golden); R. Charlesworth, Manchester.

FRENCH FOWLS—First, Hon. W. C. W. Fitzwilliam (La Flèche). Second, Hon. W. H. W. Fitzwilliam (Crève-Cœur). Highly Commended, Col. Stuart Wortley, Grove End Road, London; Hon. W. C. W. Fitzwilliam (La Flèche). Commended, O. E. Creswell, Hanworth Rectory, Hounslow (Rouens).

ANY VARIETY NOT PREVIOUSLY MENTIONED—First, W. Mason, Denton, Manchester (Black Hamburgs). Second, Rev. G. Hustler, Stillington Vicarage, York (Malays). Highly Commended, H. Saville (Japanese Silkies); C. Sidgwick (Black Hamburgs).

GAME BANTAMS—First, F. M. Tindall, Sheffield. Second, J. Tomlinson, Sheffield. Highly Commended, G. Smith, Staveley.

BANTAMS (Any other variety)—First, J. Siddall, Sheffield (Black). Second, Messrs. S. & R. Ashton (White).

DUCKINGS (Aylesbury)—First and Second, Hon. W. H. W. Fitzwilliam. Highly Commended, R. Chambers, Rotherham.

DUCKINGS (Rouen)—First, J. White, Whitley, Netherton. Second, C. Sidgwick.

SELLING CLASS (Any variety)—First, Messrs. Burch & Boulter. Second, H. Saville (Cinnamon and Buff Cochins). Commended, Rev. T. O'Grady (Golden-pencilled Hamburgs); J. Crookes, Crookes Moor Side, Sheffield (Silver-spangled Hamburgs); Rev. W. Elmhirst (East India Duckings); T. Boulker, Revidge, Blackburn (Rouen Drake and Duck); Hon. C. W. Fitzwilliam (Silver-spangled Hamburgs and Wild Ducks); Hon. H. W. H. Fitzwilliam.

GAME COCK (Undubbed, Any variety)—First, C. Chaloner. Second, G. Westenholme, Sheffield. Highly Commended, Earl Fitzwilliam, Wentworth Woodhouse (Brown Red).

SWEETSTAKES FOR SINGLE COCKERELS.

GAME—First, J. Cope. Second, C. Chaloner. Highly Commended, Rev. T. O'Grady.

DORRINGS—First, O. E. Creswell. Second, Hon. H. W. Fitzwilliam.

GAME BANTAMS—Prize, O. E. Creswell.

JUDGE—Mr. Teghtmeyer, Fortis Green, London, N.

LEIGHTON BUZZARD POULTRY SHOW.

The first Exhibition of the kind yet held at Leighton Buzzard took place on the 2nd and 3rd inst. The following is the list of awards:—

DORRINGS (Any variety)—Cup, First and Third, Mrs. Seamons, Hartwell, Aylesbury, Bucks. Second, W. Denison, Woburn Sands. Highly Commended, J. Haward, Ipswich, Suffolk; O. E. Creswell, Hanworth Rectory, Hounslow. Commended, Rev. A. N. Neumann; W. Denison; H. Ridgway, Leighton Buzzard.

SPANISH—First and Second, F. James, Peckham Rye. Third, W. R. Bull, Newport Pagnell, Bucks. Commended, W. R. Bull; Hon. Miss Douglas Pennant, Penrhyn Castle, Bangor, North Wales.

COCHINS (Buff)—Cup and First, G. Shrimpton, Leighton Buzzard. Second, Hon. Miss Douglas Pennant. Third, Mrs. Clarke, Bedford. Highly Commended, Miss Hammer, Stockgrove, Leighton Buzzard. Commended, Rev. S. C. Hammett, Warwick.

LOCAL CLASSES—Cup, G. Shrimpton.

COCHINS (Any other variety)—First, B. S. Lowndes, Stony Stratford (Partridge Cochins). Second and Third, Mrs. Clarke (White Cochins). Highly Commended, J. K. Fowler, Aylesbury (Partridge Cochins). Commended, M. Ridgway, Dewsbury, Yorkshire.

BRAMA POOTRA (Any colour)—Cup and First, Hon. Miss Douglas Pennant (Dark Brahmas). Second, M. Leno, Markyate Street, near Dunstable, Third, F. James. Highly Commended, Mrs. Seamons. Commended, J. H. Cuff, Metropolitan Cattle Market, London.

HAMBURGS (Gold and Silver-pencilled)—First and Second, C. Havers, ngatstone, Essex. Third, withheld.

HAMBURGS (Gold and Silver-spangled)—Prize, Rev. F. Tearle, Gazeley Vicarage, Newmarket.

POLANDS (Any variety)—First and Second, G. W. Boothby, Louth, Lincolnshire (Silver and Gold Polands).

FRENCH FOWLS (Any variety)—First and Third, Col. Stuart Wortley, Grove End Road, London. Second, M. Leno, La Flèche. Highly Commended, Miss Hammer (Crève-Cœur); M. Leno (Crève-Cœur); J. K. Fowler (Rouens and Crève-Cœur).

GAME (Black-breasted Red)—First, R. B. Stafford, Bedford. Second, Rev. C. Mayor, Woburn, Woburn. Third, J. Haward.

GAME (Any other variety)—First, Rev. C. Mayor (Brown-breasted Red). Second, Rev. H. C. Russell, Doncaster (White Game).

GAME BANTAMS—Cup and First, W. B. Jeffries, Ipswich. Second, G. H. Raynor. Third, W. Boucher, Blenheim Crescent, Notting Hill, London. Highly Commended, J. Allen, Amptill; T. P. Willis, Winslow, Bucks;

M. Ridgway. Commended, M. Leno; Rev. E. S. Tiddeman, Childerchitch Vicarage, Brentwood, Essex.

BANTAMS (Any other variety)—First, M. Leno (Silver). Second, T. C. Harrison, Hull. Third, Mrs. Holmes, Shepherd's Bush, London (Brown-breasted Red Game). Highly Commended, Baron M. de Rothschild, Mentmore, Bucks (Golden Sebrights); R. Bentley, Funningly Park, Rawtry, Yorkshire (Japanese); M. Leno (Gold-laced); M. Ridgway (Black).

DUCKS (Aylesbury)—First and Third, Mrs. Seamons. Second, J. K. Fowler. Highly Commended, F. Cresswell, Hanworth, Middlesex; J. K. Fowler. Commended, W. R. Bull; Mrs. Clarke.

DUCKS (Rouen)—First, J. K. Fowler. Second and Third, W. Denison.

DUCKS (Any variety)—First, T. C. Harrison (Carolinas). Second and Third, Mrs. Clarke (White Peruvians). Highly Commended, M. Leno (Black East Indians).

GEESSE (Any variety)—First, J. K. Fowler. Second, R. Bentley (White). Third, Mrs. Seamons. Highly Commended, Mrs. Jary, Woburn (Hungarian); Mrs. Clarke (Astrachan and Toulouse); Lady M. Macdonald.

TURKEYS (Any variety)—First, J. N. Beasley, Chapel Brampton, Northampton. Second and Third, Baron M. de Rothschild (Black Norfolk and White Norfolk). Highly Commended, W. Denison (Norfolk and Cambridge).

ANY VARIETY—Very Highly Commended, Baron M. de Rothschild (Silver Pheasants).

PIGEONS.

TRUMPETERS—Prize, W. Denison. **CARRIERS**—First, E. S. Smith, Boston, Lincolnshire. Second, M. Ridgway. Highly Commended, J. Allen.

POUTERS—First, Second, Highly Commended, and Commended, F. Gresham, Sheffield, Beds.

FANTAILS—Prize, J. W. Edge, Birmingham (Blues).

ANTWERPS—First, J. W. Edge. Second, E. S. Smith.

RUNTS—Prize, J. Allen.

DRAGONS—First, J. W. Edge. Second, Rev. H. C. Russell.

ANY OTHER VARIETY—First, J. W. Edge (Red Swallows). Second, J. Allen (Black Swallows). Highly Commended, M. Ridgway (Black Trumpeters). Commended, W. Denison (Mottled Trumpeters).

CAGE BIRDS.

CANARIES (Dark Yellow)—First, G. Barnesby, Derby. Second, Rev. C. Russell.

CANARIES (Mealy)—First and Second, G. Barnesby.

CANARIES (Belgian)—First and Second, G. Barnesby.

CANARIES (Any other sort)—First, G. Barnesby. Second, and Highly Commended, Rev. H. C. Russell.

GOLDFINCHES—Prize, Rev. H. C. Russell.

BULLFINCHES—First, Rev. A. H. Glennie, Kirkby Lonsdale. Second, G. Barnesby. Highly Commended, Rev. H. C. Russell.

LINNETS—First and Second, Rev. H. C. Russell.

ANY SORT OF CAGED BIRDS—First, G. Barnesby (Goldfinch and Canary Mule). Second, G. Shrimpton (Goldfinch and Canary Mule).

CAGE OF SIX BIRDS (Any variety)—First, G. Barnesby. Commended, Rev. A. H. Glennie; J. Webster.

The Judge of Poultry and Pigeons was Edward Hewitt, Esq., of Sparkbrook, near Birmingham; and Mr. Baker, of Cambridge, awarded the prizes for large birds.

SUNDERLAND POULTRY SHOW.

(From a Correspondent.)

THIS Show was held January 1st, in the Central Hall, John Street, Sunderland. The arrangements were very good, and reflected great credit on Mr. Toft, the Hon. Sec., and the Committee of Management. *Bantams* formed the principal feature, and the show of these was very good indeed. Black Reds had the palm, Duckwings running them very closely. We also noticed a very good pen or two of Sebrights. The first-prize pen of Game Bantams, although suffering from cold, were most beautiful birds. The first-prize single Game hen, a Brown Red, was very excellent. Blacks and Whites were a fair show.

Large birds formed a moderate show as to numbers, but the quality was in most cases of a high order, *Poualms* and *Dorplings* being the best. Altogether the Show was a decided success.

Mr. Hodgson, of Darlington; and Mr. Sum, of West Cranlington, were the Judges. The following is the prize list:—

BANTAMS (Black Reds, for Club Members only)—First and Second, C. Grimshaw. Third, J. Clark.

BANTAMS (Duckwings)—First and Third, J. Barrill. Second, C. Grimshaw.

BANTAMS (Piles and White)—First, C. Grimshaw. Second, J. Muirhead. Third, T. Toft.

GAME BANTAM—Cock—First, D. Hunter. Second, W. Dixon. Third, T. Toft. *Hen*—First, A. Bugden. Second, C. Grimshaw. Third, J. Muirhead.

BANTAMS (Sebrights)—First, Messrs. Scott & Ackroyd. Second, T. Toft.

BANTAMS (Black and White, Rose-combed)—First and Third, W. Dixon. Second, J. Muirhead. *Hen*—First, J. Clark. Second, W. Dixon. Third, Messrs. Scott & Ackroyd.

ANY VARIETY—Old Cocks—First, W. Dixon. Second, J. Clark. Third, Messrs. Scott & Ackroyd. *Old Hens*—First, A. Bugden. Second, J. Mullens. Third, J. Muirhead.

GAME BANTAMS (Open to all English)—First, R. Gonll. Second, A. Bugden. Third, Messrs. Scott & Ackroyd.

LARGE BREEDS.

GAME (Black Reds)—First, Second, and Third, J. T. French.

GAME (Duckwings)—Prize, J. Mullens.

GAME—Cock—First, J. Black. Second, J. T. French. *Hen*—First, J. Black. Second, G. Allen. Third, G. Carrick.

HAMBURGH (Pencilled)—First and Second, H. Whitfield Hellen.

POLISH—First, G. Allen. Second, J. Clark. Third, T. Hunter.

COCHINS—Prize, D. Rutter.

DORRINGS—First, D. Rutter. Second, G. Grimshaw. Third, J. Mullens.

ANY OTHER VARIETY.—Prize, T. Toft. (These were very large birds, a cross between Dorking and Brahmas.) *Cock*.—First, D. Rutter. Second, C. Grimshaw. *Hen*.—First, J. Clark. Second, D. Rutter.
DUCKS.—First, Second, and Third, J. Black.

ULVERSTON POULTRY SHOW.

This was held on the 1st and 2nd inst., when the following awards were made:—

Cup to the most successful Exhibitor in the Show—H. Beldon, Goitstock, Bingley.

Cup for the best pen of Game—J. Fletcher, Stoneclough, near Manchester.

Cup for the best pen of Cochins or Brahmas—R. Smalley, Lancaster.

Cup for the best pens of Hamburgs—H. Beldon.

SPANISH (Black).—First, H. Beldon. Second, H. Wilkinson, Skipton. Third, J. Thresh, Bradford. Highly Commended, J. Sichel, Timperley. Commended, L. O. E. Mackinnon, Kirkby; M. McMellon, Glossop, Derbyshire; H. Wilson, St. Bees; W. Ripley, Ulverston.

DORKINGS (Any colour).—First, R. D. Holt, Winde mere. Second, J. Sichel. Third, J. H. Wilson.

GAME (Black-breasted or other Reds).—First, J. Fletcher. Second, J. H. Wilson. Third, G. Hall, Kendal.

GAME (Duckwings and other Greys and Blues).—First, L. Casson, Ulverston. Second, J. Poole, Ulverston. Third, J. Fletcher. Highly Commended, W. J. Cope, Barnsley.

GAME (Any other variety).—Prize, W. Robinson, Old Park, near Cartmel. COCHIN-CHINA (Cinnamon and Buff).—First, H. Beldon. Second, E. A. Aglionby, Hawkshead. Third, J. Poole.

COCHIN-CHINA (Brown and Partridge).—First, J. Coward, Ulverston. Second, E. A. Aglionby. Third, J. Poole. Highly Commended, B. Waite. COCHIN-CHINA (White).—First, Second, and Third, R. Smalley. Highly Commended, J. F. F. Schollick, Aldingham Hall. Commended, J. F. F. Schollick; J. H. Wilson.

COCHIN-CHINA (Any variety).—First, J. Poole. Second, A. E. Aglionby, Third, T. Thexton, Ulverston. Highly Commended, T. Thexton. Commended, J. Poole.

BRAMA POOTRA (Any colour).—First, W. Hargreaves, Bacup. Second, J. Poole. Third, H. Lacy, Hebdon Bridge. Highly Commended, F. Powell, Knaresborough; J. Poole. Commended, E. A. Aglionby; J. Sichel; J. W. Harrison, Spalding; M. Brooksbank, Manchester; W. Hargreaves.

HAMBURGS (Golden-pencilled).—First, H. Beldon. Second, H. Pickles, jun., Earby, near Skipton. Third, F. D. Mort, Moss Pit House, near Stafford. Highly Commended, Messrs. Bowman & Fearon, Whitehaven. Commended, J. Sichel.

HAMBURGS (Silver-pencilled).—First, H. Beldon. Second, J. Smith, Kendal. Third, H. Pickles. Highly Commended, J. Walker, Knaresborough.

HAMBURGS (Golden-spangled).—First, H. Beldon. Second, M. A. Hyde, Ashton-under-Lyne. Third, J. White, Netherton, Wakefield. Highly Commended, J. D. Nicholson, Hawkshead; W. McMellon; J. Walker. Commended, H. Pickles jun.; T. Walker, jun., Denton; S. Burn, Whithy, Yorkshire.

HAMBURGS (Silver-spangled).—First, H. Beldon. Second, H. Pickles, jun. Third, J. Fielding, Newchurch, near Manchester. Highly Commended, J. Sichel. Commended, J. Walker.

ANY OTHER DISTINCT BREED.—First, H. Beldon. Second, J. Sichel. Third, Col. Stuart Wortley, London. Highly Commended, W. F. Dixon.

GAME BANTAMS.—First, G. Maples, jun., Wavertree, near Liverpool. Second, G. Hall. Third, J. Poole. Highly Commended, J. Downs, Glossop; F. Powell. Commended, T. Robinson; J. Poole; M. Redhead, Kendal.

BANTAMS (Any other variety).—First, R. Ashton. Second, H. Beldon. Third, T. C. Harrison. Highly Commended, W. J. Cope.

DUCKS (White Aylesbury).—First, Messrs. Bowman & Fearon. Second, D. Hardie. Third, M. Ferrand, Dalton, near Huddersfield. Commended, W. F. Dixon; J. W. Harrison.

DUCKS (Rouen).—First, J. White, Wakefield. Second, D. Hardie. Third, T. Robinson. Highly Commended, S. Satherthwaite, Ulverston. Commended, T. Houliker, Blackburn; T. Robinson, H. Dowsett, Chelmsford.

DUCKS (Any other variety).—First, S. & R. Ashton. Second, T. C. Harrison. Third, S. Eura. Highly Commended, T. Houliker. Commended, R. Smalley.

CANARIES.

BELGIAN (Yellow).—First, W. Jones. Second, J. Paxton, Ulverston. Highly Commended, T. Woodend; W. Jones. Commended, W. Jones.

BELGIAN (Buff).—First, T. Woodend. Second, W. Jones. Highly Commended, J. Williamson; H. Geldert, Ulverston.

MULES.—First, J. Baxter. Second, W. Bradley. Highly Commended, T. Ward. Commended, W. Slater; M. Clarkson.

PIEBALD (Yellow or Buff).—First, J. Paxton. Second, J. Boulton. Highly Commended, J. Williamson; G. R. Martin.

LIZARD (Gold or Silver-spangled).—First, M. Clarkson. Second, W. Downham.

COMMON (Yellow).—First, T. Cockerton, Ulverston. Second, B. Kirkby, Ulverston. Highly Commended, J. H. Matthews, Ulverston.

COMMON (Buff).—First, M. Hunter, Ulverston. Second, Mrs. McLester, Ulverston.

GOLDFINCHES.—First, M. Clarkson. Second, H. Geldert. Highly Commended, W. Bradley.

EXTRA PRIZES.

GAME (Any colour).—*Cock*.—Cup, J. H. Wilson. Second, T. Robinson. Third and Fourth, J. H. Wilson. Highly Commended, W. J. Cope, Barnsley; T. Mason; J. Fletcher. Commended, W. Henry, Manchester. *Cock and Hen*.—First, W. Boulton, Parkhouse. Second, W. Boulton. Third, E. Swainson, Nibthwaite. Highly Commended, L. Casson; M. Satherthwaite. *Chickens*.—Cup, J. Fletcher. Second, J. Barrow. Third, J. Fletcher. Highly Commended, J. Pennington, Birkenhead; D. Hardy; M. Graham. Commended, D. Tate; T. Robinson; J. Poole. *Pullets*.—First, L. Casson. Second, T. Robinson. Third, M. Graham, Highly Commended, J. H. Wilson.

GAME BANTAM.—*Cock*.—First, Messrs. G. & C. Furness, Accrington. Second, J. Wood, Chorley, Lancashire. Third, G. Maples, jun., Waver-

tree, near Liverpool. Highly Commended, W. Boulton, Parkhouse; J. Smith, Kendal. Commended, J. Poole.

JUDGES.—*Poultry*.—Mr. E. Hutton, Padsey, Yorkshire. *Canaries*.—Mr. J. Hunt, Barrow.

PAISLEY ORNITHOLOGICAL ASSOCIATION'S SHOW.

The fourteenth Exhibition of this Association was held on the 1st and 2nd inst., in their Large Hall, William Street. We have only room this week for the prize list, which is as follows:—

SPANISH.—First, J. Yuill, Airdrie. Second, J. McInnes, Broomlands, Paisley. Third, W. Neilson, Johnstone. Fourth, J. Crawford, Beith. *Cock*.—Medal, J. Yuill. *Cockerel*.—Medal, J. McInnes. *Chickens*.—First and Second, J. McInnes. Third, T. Leitch, Cross Arthurlie, Earthead. Fourth, J. Campbell, Ardrossan.

DORKINGS (Coloured).—First, R. Brock, Clarendon Lane, Glasgow. Second, D. Heggie, Glasgow. Third, W. Reid, Hayston, Kirkintilloch. Fourth, R. Dickson, Airdrie. *Cock*.—Medal, R. Brock. *Chickens*.—First, G. Alston, Craighead, Hamilton. Second, Mrs. Martin, Paisley. Third, J. Gray, Airdrie. Fourth, W. Reid.

DORKINGS (White).—First, Second, and Fourth, J. Aitken, Paisley. Third, J. Pettigrew, Dahnellington.

CHINESE.—First and Third, J. Stewart, Thistlebank, Wellowburgh. Second, Countess of Eglinton and Winton. Fourth, R. Cron, Dahnellington. *Cock*.—Medal, J. Stewart.

BRAMA POOTRA.—First, J. Stewart. Second, J. A. Dempster, Stirling. Third, G. Alston. Fourth, Mrs. Gillison. *Cock*.—Medal, J. Stewart.

OLD SCOTCH BREED.—First, R. Blair, Thornhill, Johnstone. Second, C. McDiarmid, Glasgow. Third, J. Fulton, Beith. Fourth, W. Crow, Busby. *Cock*.—Medal, R. Blair.

HAMBURGS (Golden-spangled).—First, J. Jardine, Kilmarnock. Second, H. McLatchie, Whiteford Hill, Ayr. Third, D. Black, Paisley. Fourth, T. Walker, Fenton, Manchester. *Cock*.—Medal, J. Jardine.

HAMBURGS (Golden-pencilled).—First and Second, J. Smith, Stewarton. Third, H. Arndle, Stonefield, Paisley. Fourth, W. Baco, Stonefield. *Cock*.—Medal, J. Smith.

HAMBURGS (Silver-spangled).—First, B. Gardiner, Auchencruive, Ayr. Second, W. R. Menzies, Crossmyle. Third, J. Stewart, South Arthurlie, Barrhead. Fourth, A. Stirling, Barrhead. *Cock*.—Medal, B. Gardiner.

HAMBURGS (Silver-pencilled).—First and Second, H. S. Colligan, M.D., Paisley. Third, W. Bachop. Fourth, R. Ferrie. *Cock*.—Medal, H. S. Colligan.

FOLANTS (Topped).—First, Countess of Eglinton and Winton. Second, R. McNab, Cardonald, by Govan. Third, J. Forsyth, Carmyle. Fourth, G. W. Boothby.

GAME (Black-breasted and others).—First, Second, and Fourth, P. Alexander, Bridge of Weir. Third, J. McNab. *Cock*.—Medal, P. Alexander.

GAME (Any other colour).—First, W. R. Menzies. Second, C. Johnstone. Third, H. Goodall, Limehouse, Kirkcaldy. Fourth, J. McIndee, Gateside, Barrhead. *Cock*.—Medal, W. R. Menzies.

ANY OTHER BREED NOT BEFORE MENTIONED.—First, W. White, Wellmeadow, Paisley. Second, W. R. Park, Melrose (Crève-Coeurs). Third, J. Allan, Kilbirnie. Fourth, T. Leitch, Cross Arthurlie.

DUCKS (Aylesbury).—First, J. Dryburgh, Arkleston. Second, Z. H. Heys, Barrhead. Third, J. Henderson, Cleckhinn, Motherwell. Fourth, J. Robertson, Kilmarnock. *Drake and Duck*.—Medal, J. Dryburgh.

DUCKS (Rouen).—First and Second, J. Robertson. Third, J. H. McNab. Fourth, S. Young, Kirkton Mill, Neilston. *Drake and Duck*.—Medal, J. Robertson.

DUCKS (Any other variety).—First, J. Robertson. Second, R. Dickson, Airdrie. Third, W. Abercrombie, Castlehead.

GAME BANTAMS.—First, W. Mason, Jedburgh. Second, R. McGregor, Sunnyhew, Perth. Third, J. Harvie, Castlegate, Jedburgh. Fourth, D. K. Mackay, Chapelfield, Glasgow. *Cock*.—Medal, W. Mason.

BANTAMS (Black).—First, W. R. Menzies. Second, S. & R. Ashton, Motam, Cheshire. Third, T. C. Harrison, Hull. Fourth, W. Morris, Paisley. *Cock*.—Medal, W. R. Menzies.

BANTAMS (Any other variety).—First and Second, W. Morris. Third, T. C. Harrison. Fourth, A. Mitchell, jun., Paisley.

SELLING CLASS.—First, H. S. Colligan, M.D. Second, J. Walker, Barshaw. Third, Mrs. Gillison, Milngavie. Fourth, W. R. Park.

PIGEONS.

POUTERS (Blue).—First, R. Fulton, Deptford, London. Second, W. Lightbody, Glasgow. Third, J. Hawley, Bingley, Yorkshire.

POUTERS (Black).—First, J. Sharp, Johnston. Second, R. Fulton. Third, W. Lightbody.

POUTERS (White).—First, W. Nelson, Johnstone. Second, R. Fulton. Third, J. Sharp.

POUTERS (Any other colour).—First, G. Wallace, Burnbank, Glasgow. Second and Third, R. Fulton.

TUMBLERS (Short-faced).—First and Second, R. Fulton. Third, J. Hawley.

TUMBLERS (Any other variety).—First, J. Sharp. Second, J. Hawley. Third, A. Morrison, Glasgow.

CARRIERS.—First and Second, J. Hawley. Third, R. Wardrop.

FANTAILS.—First, J. Sharp. Second, G. White, jun., Ladyburn, Paisley. Third, W. Crawford, Beith.

JACOBINS.—First, J. Hawley. Second, R. Fulton. Third, J. R. Rennards, Helensburgh.

NUNS.—First, R. Davidson, Jedburgh. Second, R. Paterson, Melrose. Third, W. R. Park.

TURBITS.—First, W. R. Park. Second, J. R. Rennards. Third, J. Fielding, jun., Rochdale.

PIGEONS (Common).—First and Third, J. Hawley. Second, J. Glasgow.

ANY OTHER DISTINCT BREED.—First, Second, and Third, J. Fielding.

POUTERS (Any colour).—Medal, J. Sharp (Blacks).

ANY VARIETY (Pouters excluded).—Medal, J. Hawley.

CANARIES.

CLEAN.—First, J. Mair, Kilmarnock. Second, T. Echanan, Glasgow. Third, A. Kelly, Paisley.

YELLOW—*Cock*.—First, R. Houston, Kilbirnie. Second, J. Graham, Kilmarlock. Third, A. Kelly. Fourth, W. McLeod, Glasgow. *Hens*.—First and Third, J. Muir, Kilmarlock. Second, R. Turnbull, Glasgow. Fourth, W. Weir, Paisley.

BUFF.—*Cock*.—First, P. Allen, Kilbirnie. Second, G. Graham. Third, W. Stevens, Invermann. Fourth, R. Gardiner, Glasgow. *Hens*.—First, A. Kelly. Second, R. Houston. Third, J. Dunlop. Fourth, J. Mitchell, Perth.

PHEASANT.—First, A. Crawford. Second, M. Tode, Paisley. Third, R. Wood, Paisley.

PHEASANT (Yellow).—*Cock*.—First, J. Dunn, Galston. Second, G. Horsburgh, Glasgow. Third, T. M. Muir, Knockintiber. Fourth, J. Fisher, Dalry. *Hens*.—First, J. B. McLean, Glasgow. Second, J. Fisher. Third, J. Crawford. Fourth, C. Gardner.

PINHEAD (Buff).—*Cock*.—First, N. M. Lean. Second, R. Hunter. Third, J. Glasgow. Fourth, A. Cochran. *Hens*.—First, W. Santer, Paisley. Second, R. Hunter. Third, T. M. Muir. Fourth, W. Crawford.

GOLDEN PHEASANT.—First, J. Gray, Airdrie. Second, A. Kerr.

GOLDEN PHEASANT.—First, J. Watchmont, Stevenson. Second, J. Crawford.

HOME OR FOREIGN BIRDS.—First, J. Lambie, Paisley. Second, J. Barr, Paisley.

BEST COCK CANARY.—Silver Medal, R. Houston. *Hens*.—Silver Medal, A. Kelly.

The following were the Judges:—*Poultry*.—Messrs. W. F. Farquhar, Barrhead; J. Paton, Stewarton; D. Brown, Perth; J. Miller, Glasgow; J. Crawford, Glasgow; A. Paterson, Airdrie; J. McInnes, Paisley; and H. Todd, Paisley. *Pigeons*.—Messrs. J. Huie, Glasgow; and A. Mitchell, Paisley. *Small Birds*.—Messrs. W. Taylor, Glasgow; T. Buchanan, Glasgow; W. Orr, Perth; J. Wren, Pollokshaws; W. White, Renfrew; J. M. Lean, Paisley; A. Mitchell, Paisley; and M. Wilson, Paisley.

THE ESKDALE POULTRY SHOW.

The sixth annual Exhibition of this Society was held in the Eskdale Temperance Hotel, Langholm, on the 1st and 2nd inst. We must defer remarks till next week. Subjoined is the prize list:

DORKINGS (Any colour).—First, Miss Malcolm, Milnholm. Second, D. White, Duffield. Third, D. Hardie, Sorbie.

GAME (Any colour).—First, D. Hardie. Second and Third, J. Brough, Carlisle. Highly Commended, J. H. Wilson, St. Bees. Commended, J. Brough, Carlisle; A. Thomson, Herring Green; R. Robinson, Wighton.

DORKINGS (Silver).—First and Second, D. Hardie. *Chickens*.—First, D. Hardie. Second, T. L. Jackson, Bush.

DORKINGS (Dark).—First, T. L. Jackson. Second, R. Reid, Moat. Highly Commended, J. Corrie, Langholm. *Chickens*.—First, G. Hodley, Wetheral. Second, D. Hardie. Highly Commended, Miss Malcolm; D. Hardie. Commended, R. Reid.

SPANISH.—First, W. Paterson, Langholm. Second, J. C. Wilson, Annan. *Chickens*.—First, M. Turnbull, Melrose Mills. Second, W. Paterson. Highly Commended, W. Paterson; Messrs. Bowman & Fearon, Whitehaven. Commended, J. H. Wilson; W. Paterson.

GAME (Black or Brown Red).—First, D. Hardie. Second, J. Brough. Highly Commended, J. Brough. Commended, A. Thomson. *Chickens*.—First, W. Urquhart, Langholm. Second, J. Brough. Highly Commended, W. Taft, Hatherlie, Selkirk.

GAME (Any colour).—First, J. Brough. Second, A. Thomson.

COCHIN-CHINAS (Any colour).—First, Messrs. Bowman & Fearon. Second, R. Dalgliesh, Billholm. Highly Commended, W. Park, Abbotsmeadow, Melrose.

BRAHMA POOTRA (Any colour).—First, D. Murray. Second, A. Paterson. Highly Commended, W. R. Park, Abbotsmeadow.

HAMBERGERS (Golden-spangled).—First, A. Hatherlie, Selkirk. Second, R. Dickson, Selkirk. Highly Commended, R. Burrow, Longtown.

HAMBERGERS (Golden-pencilled).—First, W. Bowe, Carlisle. Second, W. R. Park. Highly Commended, J. Carruthers, Hopsrig; R. Burrow.

HAMBERGERS (Silver-spangled).—First, W. R. Park. Second, W. Bowe. Highly Commended, W. Bowe; Mrs. Evers, Burnfoot.

HAMBERGERS (Silver-pencilled).—First, W. R. Park. Second, J. Platt, Dean, near Bolton. Highly Commended, Miss Malcolm, Burnfoot; J. Musgrave, Longtown.

ANY OTHER VARIETY.—First, W. R. Park. Second, D. Hardie (Silver Polders).

BANTAMS (Black-breast or Brown Red).—First, D. Hardie. Second, Messrs. Bowman & Fearon. Highly Commended, J. Scott, Castlegate, Auldburgh; J. Roberts, Selkirk.

BANTAMS (Duckwing, Fife, &c.).—First, W. Myron, Jedburgh. Second, H. 14, 15, West Terrace, Darlington. Highly Commended, J. Lunn, Jedburgh.

BANTAMS (Any variety).—Prize, Messrs. S. & R. Ashton.

TURKIES.—First, T. L. Jackson. Second, D. Hardie. Highly Commended, T. J. Harrison, Singleton Park. *Poult*.—First, J. Smith, Grantham. Second, D. Hardie.

GESE (Grey or Mottled).—First, R. Reid. Second, D. Hardie.

GESE (White).—First, Miss Paterson, Terraona. Second, M. Turnbull, Commended, A. Greys, Atherrig.

DUCKS (Aylebury).—First, D. Hardie. Second, R. Latimer, Forgechrae. Commended, W. Bell, Exes Mill; D. Hardie.

DUCKS (Rouge).—First and Second, D. Hardie. Highly Commended, D. Dunn, Green Hill House, Keighley; R. Dalgliesh; A. Griev.

DUCKS (Any other variety).—First, E. Hutton, Paisley, Leeds. Second, G. R. Paterson. Highly Commended, Miss Paterson; Miss Palmer, Dashed Green; A. Robinson, Longtown.

CORAG (Any colour for first town of Langholm (Any Breed)).—First, J. L. Macdonald (Cochin). Second, W. Ballantyne (Spanish). Third, W. Bole (Hambur).

COTTAGE CLASS FOR ESKDALE (Any Breed).—First, R. Latimer. Second, M. H. Hurry, Sorbie Cottage (Dorkings). Third, Mrs. Armstrong, Kirkton (Dorkings). Highly Commended, J. Carruthers, Hopsrig; G. Oliver, Midhillfoot (Cochins); Miss Graham, Blisspath (Dorkings); C. Gentile, Auld.

SEALING CLASS.—First, G. Bell, High Street, Wighton. Second, D. Barr, Duffield. Third, W. Paterson (Spanish). Highly Commended,

Miss Palmer (Wild Ducks); T. L. Jackson (Silver Duckwings); D. Hardie (Dorkings); Miss F. Johnson, Walton House; W. Urquhart. Commended, W. R. Park (Silver Polders).

PIGEONS.

CROPPERS.—First, J. Grant, Corstorphine Hill House. Second, J. Campbell, Langholm Distillery. Commended, K. Irving, Langholm.

TOUMBERS (Almond).—First, J. Campbell. Second, R. Whittaker, Delph Hill, near Bolton.

TOUMBERS (Any other variety).—First, J. Campbell. Second, R. Whittaker. Highly Commended, Messrs. Sisson & Hume, Carlisle.

JACOBINS.—First, J. Towerson. Second, J. Campbell.

FANTAILS.—First, W. R. Park. Second, J. Thomson, Bingley.

CARRIERS.—First, J. Towerson, Egremont. Second, J. Campbell.

NEWS.—First, R. Paterson. Second, R. Davidson, Swinnie, Jedburgh. Highly Commended, R. Irving; J. Thomson.

TURBITS.—First, J. Thomson. Second, R. Paterson. Highly Commended, W. R. Park. Commended, J. Dugdale, Carlisle.

ANY OTHER VARIETY.—First, W. R. Park (Owls). Second, J. Hardie (Marpies). Highly Commended, J. Campbell.

SELLING CLASS.—First, W. R. Park (Fantails). Second, R. Paterson (Fantails). Highly Commended, W. R. Park (Turbits); J. Barton, Jedburgh (Carriers); J. Grant; J. Hardie.

CANARIES.

SCOTCH FANCY (Yellow).—*Cock*.—First, J. Kemp, Galashiels. Second, H. Donald, Galashiels. Highly Commended, J. Hope, Galashiels. *Hens*.—First, J. Smart, Galashiels. Second, J. Hope. Highly Commended, J. Cleghorn, Galashiels.

SCOTCH FANCY (Buff).—*Cock*.—First, J. Kemp. Second, R. Bell. Highly Commended, J. Hope. *Hens*.—First, J. Hope. Second, T. Scott, Galashiels.

BELGIAN FANCY (Yellow).—*Cock*.—Second, J. Kemp.

BELGIAN FANCY (Buff).—*Cock*.—First, J. Kemp. Second, T. Scott. *Hens*.—Second, J. Kemp.

FANCY FLOCKED (Yellow).—*Cock*.—First, W. Scott, Langholm. Second, J. Cleghorn, Galashiels. *Hens*.—First, R. Kyle, Hawick. Second, J. Cleghorn. Highly Commended, T. Scott.

FANCY FLOCKED (Buff).—*Cock*.—First, R. Kyle. Second, W. Finlane, Jedburgh. *Hens*.—Prize, J. Smart.

GOLDEN CHICKS (Yellow Flocked).—*Cock*.—Prize, A. Graham, Rowanburgh.

GOLDEN CHICKS (Buff Flocked).—*Cock*.—First, A. Graham. Second, T. Wilson, Hawick.

COMMON (Yellow).—*Cock*.—First, A. Graham. Second, P. Martin, Langholm.

COMMON (Buff).—*Cock*.—First, M. Raine, Langholm. Second, J. Corrie, Langholm. *Hens*.—First, T. Wilson. Second, J. Corrie. Highly Commended, J. Steel, Langholm.

COMMON FLOCKS (Yellow).—*Cock*.—Prize, W. Hutton, Milnholm. *Hens*.—First and Second, W. Hutton.

COMMON FLOCKS (Buff).—*Cock*.—First, J. Steel, Langholm. Second, R. Warwick, Langholm. *Hens*.—Prize, J. Kemp.

SWEETSTAKES (Green Cock or Hen).—First, H. Donald. Second, R. Kyle. Highly Commended, T. Brown, Hawick.

GOLDFINCHES.—*Cock*.—First and Second, A. Graham.

The Judges were Mr. Beldon, of Gaitstock, for *Poultry* and *Pigeons*; and Mr. Thomson, Hawick, for *Canaries*.

DUMFRIES AND MAXWELLTOWN ORNITHOLOGICAL SOCIETY'S SHOW.

The ninth annual competition of Poultry and Cage Birds under the auspices of this Society, was held on the 1st and 2nd inst., in the Mechanics' Institute Hall, Dumfries.

GAME (Black Reds, Blacks, and other Reds and Blues).—First, J. Harding, Dumfries. Second, J. Brough, Carlisle. Highly Commended, T. Parker, Kirkcubright. Commended, W. D. Dickson, Carroncroft.

Chickens.—First, T. Maxwell, Sloan's Cottage. Second, A. Robinson, Longtown, by Carlisle.

GAME (Duckwings, Whites, and other Greys).—First and Second, T. Maxwell. Commended, T. Hill, Collin. *Chickens*.—Medal and First, J. Brough. Second, J. Baird, Thornhill. Highly Commended, T. Maxwell. Commended, C. Turner, Dumfries.

SPANISH (Black).—Medal, First, and Second, J. Neilson, Ecclefechan.

Chickens.—First and Commended, J. Kerr, Erclefechan. Second, J. C. Wilson, Annan.

DORKINGS.—Medal and First, W. H. Arundell, Barjarg Tower. Second, W. G. F. Lyons, Kirkcubright House. Highly Commended, R. Reid, Longtown, by Carlisle. T. Parker; J. Milligan. *Chickens*.—First, T. Ferguson, Maxwelltown. Second, Mrs. Corrie, Heath Hall. Highly Commended, W. G. F. Lyons. Commended, Miss A. M. Holm.

COCHIN-CHINA (Any colour).—First, Lady J. Johnstone Douglas, Lockerbie House. Second and Highly Commended, Mrs. Moffat, Kirtlebridge. Commended, S. Cowan, Clarencefield. *Chickens*.—First, Lady J. Johnstone Douglas. Second, J. Neilson. Highly Commended, S. Cowan.

HAMBERGERS (Golden-spangled).—First, Mrs. Corrie. Second, T. Musgrave, Longtown. Highly Commended, H. Currie, Ardrossan. *Chickens*.—First and Second, Mrs. Corrie.

HAMBERGERS (Golden-pencilled).—First, R. Barrow. Second, T. Musgrave. Highly Commended, W. Bowe, Carlisle. *Chickens*.—Medal, First, and Second, R. Little. Highly Commended, W. Bowe.

HAMBERGERS (Silver-spangled).—Medal and First, J. Hunter, Goldlaw Bridge. Second, T. Musgrave. Highly Commended, J. Douglas, Cairnside. *Chickens*.—First and Commended, J. Douglas. Second, W. Bowe. Highly Commended, R. Kerr, Barjarg Tower, by Auldgarth; J. Hunter. Commended, J. Douglas.

HAMBERGERS (Silver-pencilled).—First, J. Musgrave. Second, H. V. Johnstone, Broadholm. *Chickens*.—First, J. Musgrave. Second, W. Little, Dumfries.

BRAHMA POOTRAS.—First, G. Inglis, Cairn. Second, Miss M. Gardiner, Murrayton. *Chickens*.—First, T. Johnstone, Terregles. Second, T. S. Gladstone, Capenoch.

ANY OTHER VARIETY.—First, T. W. Campbell, Walton Park House.

Second, Miss M. Gardiner (Silver Polands). Commended, T. W. Campbell; G. Inglis, Corgen, Troqueer (Houdans).

DUCKS (Aylesbury).—First, Miss Johnstone Douglas. Second, W. G. F. Lyons. Commended, T. Johnstone, Waterside.

DUCKS (Bonen).—Medal and First, T. Parker. Second, Miss Johnstone Douglas. Highly Commended, T. Parker. Commended, Miss M. Gardiner.

TURKEYS (Black Norfolk).—First, G. Inglis, Gargen. Second, Miss A. McGill, Rotchell.

BANTAMS (Gold or Silver-laced).—First, T. Douglas, Thornhill. Second, W. W. Anderson, Moffat. Commended, J. P. Richardson, Dumfries.

BANTAMS (Black).—Medal and First, R. Murray, Maxwelltown. Second, Master W. Milligan, Millbank. Highly Commended, Mrs. Conpland, Dumfries.

BANTAMS (White).—First, T. Hutchison, Mouswald. Second, J. Maxwell, Allanton Mill. Highly Commended, R. Teenan, Lochside.

GAME (Black Reds).—First, J. Sharp, Johnstone. Second, C. Harper, Maxwelltown. Highly Commended and Commended, T. Maxwell.

GAME (Duckwings and Greys).—First, T. Maxwell. Second, Miss S. F. Munn, Rockhall. Highly Commended, T. Jardine, Lockerbie.

ANY OTHER VARIETY.—Prize, S. Darcey, Maxwelltown.

PIGEONS.

TUMBLERS (Common).—First, J. Sharp. Second, J. Love, Dumfries. Highly Commended, J. Marchbank, Dumfries. Commended, R. Kerr.

CARRIERS.—First, J. Thomson, Maxwelltown. Second, J. Sharp. Commended, J. Thorpe, Dumfries; T. Maxwell.

POUTERS.—First and Second, J. Sharp.

JACOBIANS.—First and Second, J. Sharp.

FANTAILS.—Medal and First, J. Sharp. Second, Miss Knott, Essex Park. Commended, T. Douglas.

ANY OTHER DISTINCT BREED.—First, J. Thomson (Barbs). Second, J. Conpland (Barbs). Commended, J. Sharp (Spots); T. Maxwell (Magpies).

BRITISH BIRDS.—Prize, J. Maxwell, Friars' Vennel, Dumfries (Crossbill). FOREIGN BIRDS.—Prize card, A. Imrie, Auldgrith Inn.

CANARIES.

SCOTCH FANCY (Yellow).—Cocks.—First and Third, J. Thorpe. Second, J. Graham, Kilmarnock. Hens.—First, J. Graham. Second, R. Davidson. Dumfries. Third, J. Thorpe.

SCOTCH FANCY (Buff).—Cocks.—First, J. Thorpe. Second, J. Graham. Third, R. Purdie, Dumfries. Hens.—Medal and First, J. Thorpe. Second, J. Little. Third, A. Hope, Maxwelltown.

PIEBALD (Yellow).—Cocks.—Medal and First, J. Thorpe. Second, J. Little. Third, D. Gibson, Lochmaben. Hens.—First, Master C. Grieve, Dumfries. Second, John Thorpe, Dumfries. Third, J. Little.

PIEBALD (Buff).—Cocks.—First, J. Thorpe. Second, R. Edgar, Maxwelltown. Third, R. M'Innes, Dumfries. Hens.—First, J. Thorpe. Second, J. Little. Third, R. M'Innes.

BELGIAN (Yellow or Buff).—Cock.—Prize, J. Thorpe. GREEN.—Cock.—Prize, W. Pool, Dumfries. Hen.—Prize, R. Edgar.

GOLDFINCH MULES (Yellow).—First, R. Bryden, Lochmaben. Second, J. Kirk, Dumfries. Third, W. Welsh, Dumfries.

GOLDFINCH MULES (Buff).—First, R. Edgar. Second, W. Fleming. Third, Master D. Brown, Dumfries.

GOLDFINCHES.—First, John Thorpe. Second, J. Wilson, Dumfries. Third, A. Martin, Castle Douglas Station.

JUDGES.—Poultry and Pigeons: James Stevens, Esq.; M.D. Ardrossan; Mr. James Paton, Stewarton. Canaries: Mr. George Grant, Paisley; Mr. George Crawford, Beith.

THE SHEFFIELD ORIGINAL FANCY RABBIT SOCIETY'S SHOW.

THIS Show was held at the Inkerman Tavern, Alma Street, on December 26th, 27th, and 28th. Nine silver cups were awarded in the Young class. It was the largest and best Show ever held in Sheffield. There were fifty pens of Rabbits exhibited, but the chief attractions of the Show were three Rabbits, measuring in the order named—W. Allison's Buck, 23½ inches; Mr. Lindley's Buck, 22½ inches; and Mr. Mangham's Doe, 22 inches. The following took prizes in the young Rabbit class:—

LENGTH OF EARS.—First (Silver Cup).—Lindley, Buck. Length of ears, 22½ inches; width, 5½ inches. Second (Silver Cup), W. Allison, Doe. Length of ears, 22½ inches; width, 5½ inches. Third (Silver Cup), W. Allison, Buck. Length of ears, 21½ inches; width, 5½ inches.

BLACK AND WHITE.—First (Silver Cup).—Mangham, Doe. Length of ears, 21 inches; width, 5 inches. Second.—Webster, Doe. Length of ears, 19½ inches; width, 4½ inches.

GREY AND WHITE.—First (Silver Cup).—Frith, Doe. Length of ears, 19 inches; width, 5½ inches.

YELLOW AND WHITE.—First (Silver Cup).—Lindley, Doe. Length of ears, 21½ inches; width, 5½ inches. Second.—Hay, Buck. Length of ears, 19½ inches; width, 5½ inches.

TORTOISESHELL.—First (Silver Cup), W. Allison, Doe. Length of ears, 19½ inches; width, 5 inches. Second.—Elliott, Buck. Length of ears, 19 inches; width, 4½ inches.

SELF-COLOUR.—First (Silver Cup).—Beaumont, Doe. Length of ears, 20½ inches; width, 5½ inches. Second, W. Allison, Buck. Length of ears, 22 inches; width, 5½ inches.

WEIGHT.—First (Silver Cup).—Frith, Doe. Weight, 9 lbs. Second, J. Leigh, Doe. Weight, 8 lbs.

W. ALLISON, Sec., 8, Cheney Row, Sheffield.

PHILOPETERISTON SOCIETY.—The grand annual Show of Pigeons of this old Society will be held at the Freemasons' Hall, Great Queen Street, on Tuesday, January 14th, from 1 to 4 P.M. Admission by ticket only, to be had on application to

the Hon. Sec., Matthew Hedley, Esq., Claremont, Red Hill, or on the day at the above Hall.

DOINGS IN A SMALL APIARY IN 1867.

ALTHOUGH the bee season of 1867 has been a decided failure, I venture to give an account of some little doings in my apiary, believing they may possess an interest to some readers of our Journal.

The spring found me in possession of three hives of black bees, each in good condition. I had restricted myself to this number, having in view the introduction of the Ligurian species, on which some notes may not be uninteresting at a future period. I have had no swarms, and no honey to appropriate.

Of my three hives, A, a two-year stock in a 14½-inch square straw hive with a wood top, was very strong. Two bell-glasses and a 9-inch square glass-framed super were placed on in May, but not until late in June were they fully taken to. In July the bees ceased comb-building, also the storing of honey. None of the combs was ever sealed; the honey being of a very dark colour, I allowed the bees to consume it, or remove it to their stock hive. Besides this, in October I had to give the stock 11 lbs. of syrup food, to make it up for wintering. The empty combs are the only produce.

B, a two-year stock, in a common round hive, was used as a non-swarm in 1866, as also this year, by placing a nadir hive under it late in May. By the middle of July there were only three combs partially built, and little honey stored. Seeing that I should obtain no yield of honey, I at once removed the nadir, drove the bees into an empty skep, and transferred them into a home-made, square, straw, bar-and-frame hive. From their original hive I took 13 lbs. of very dark-coloured honey. This, together with sugar syrup, was given them in their new domicile, and they are now in fair order for wintering.

C, the unfortunate stock of 1866, wintered well. It was fed a little in spring and was the most active of the three. A 13-inch glass-framed super was put on in May; at the end of July this was three-fourths full of combs very partially sealed; the honey was of a very dark colour. Being unfit for table, I have distributed it to make up my stocks for winter. In October this stock required 6 lbs. to make it up to 20 lbs. nett.

This autumn I have sought to extend the system of driving, and have gained some converts, as well as effected a saving of bee life. In all I have driven seventeen stocks successfully, and have only to record being stung twice. Here, amid other remedies for the sting of a bee, I would recommend the application, immediately after extracting the sting, of a little—very little—pure spirit of ammonia.

Of the seventeen driven stocks, some were added to other stocks with varying success. A few, kept single, I have distributed to be again fed up, and, so far as I now know, believe they will succeed. The bees, in each case, I was allowed to have for the driving.—J. G. C., South Northamptonshire.

(To be continued.)

OUR LETTER BOX.

NORTHERN POULTRY CLUB'S SHOW.—We shall give next week a report of this, together with a list of the awards, both having arrived too late for insertion to-day.

COLOURED DORKINGS (H. S.).—If we had to choose, we should breed from cocks and pullets with their second eggs. It does not at all injure Grey Dorkings to be crossed with the Silver-Grey; but the slightest mixture of grey is fatal to the Silver-Grey, because any mixture of white, however trifling, in the tail or on the breast, is a disqualification. It is easier to breed the pullets than the cocks, therefore the most scrupulous care must be taken in selecting the cock for breeding.

SOFT FOOD FOR FOWLS (C.).—We do not for a moment believe feeding on soft food has a tendency to make combs grow; but we are quite sure feeding on potatoes has much to do with making them fall over, in consequence of the lack of condition which such food induces.

WEIGHING A FOWL WITH HEAD DOWNWARDS (Ambleside).—The cock was suffering when you weighed him; but there is no doubt the cause of death was the rupture of a vessel from the downward flow of blood. You should always weigh a fowl in a bag or basket.

SPACE FOR POULTRY (J. E. M.).—Under the trees will do very well. If you will enclose seven postage stamps with your address, and order the "Poultry Book for the Many," you will have it free by post, and it contains plans, &c., for poultry enclosures.

BUYING POULTRY (A Lover, &c.).—Write to some advertisers in our Journal, and buy a cockerel of one vendor, and the pullets of another. Buy the "Poultry Book for the Many" and the "Garden Manual," both to be had at our office. A poultry show in and near London has been repeatedly tried, and as often failed.

WEEKLY CALENDAR.

Day of Month	Day of Week	JANUARY 16—22, 1868.	Average Temperature near London.			Rain in last 40 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.		Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.		m.	s.	
16	Tu	Meeting of Royal, Linnean, and Chemical Societies.	40.2	30.9	35.5	20	1	47	20	4	1	11	1	11	9	59		16
17	F		40.3	31.1	35.7	14	0	8	21	4	58	10	46	11	23	10	19	17
18	S	Royal Horticultural Society, Promenade.	40.3	31.0	35.6	17	59	7	23	4	3	2			24	10	39	18
19	SUN	2 SUNDAY AFTER EPIPHANY.	40.3	30.8	35.6	19	58	7	24	4	7	3	45	0	25	10	57	19
20	M	Meeting of Royal Asiatic Society.	42.7	31.0	36.8	15	57	7	26	4	8	4	19	1	26	11	15	20
21	Tu	Royal Horticultural Society, Fruit, Floral, and General Meeting.	43.9	32.3	38.1	19	56	7	28	4	6	5	0	2	27	11	33	21
22	W		44.2	32.7	38.4	17	55	7	30	4	57	5	45	2	28	11	49	22

From observations taken near London during the last forty-one years, the average day temperature of the week is 41.7; and its night temperature 31.4°. The greatest heat was 68° on the 19th, 1828; and the lowest cold 41° below zero, on the 19th, 1838. The greatest fall of rain was 0.88 inch.

THE GLADIOLUS: ITS CULTURE AND DISEASES.



SOME of your correspondents seek for information on the Gladiolus and its culture, I venture to give my experience on the subject, having grown this gorgeous autumn flower extensively for the last few years.

The following is my mode of culture, both for flowering the bulbs, and for raising and growing seedlings.

First let me premise that I have never suffered much from the fatal disease, like

"D.,"*Deaf*, and others. In the wet and cold September of 1866 I had a collection growing on a border with rather a stiff soil, and on lifting the bulbs in October some of them were marked with black spots. A few of the best named sorts which were affected I tried to save in the following manner:—At lifting time I dried them thoroughly off, and then potted them, with a handful of wood-charcoal dust round the bulbs. The soil in the pots was kept dry till April, when the pots were plunged in a frame, and the bulbs started with a slight bottom heat. In June the plants were planted-out, and flowered well, and the new-formed bulbs were perfectly healthy when taken up in October. Last year at lifting time I picked out a few spotted bulbs, which have been kept separate from the others, and will be planted in April or May with some charcoal dust round them.

I think all black-spotted bulbs should be planted later in the season than the healthy ones. If planted in February or March they will lie some time in the ground before growing, and the rot is then sure to end fatally. The cause of these black spots on the bulbs, if due to atmospheric influences, may be as mysterious as the Potato disease, and as difficult to prevent.

As to the time of planting, I believe healthy bulbs may be put in from February to May, or June, according to the weather and state of the soil. The *Cardinalis* and *Ramosus* sections, being the earliest in flowering, should be planted first; and, ending with the *Gandavensis* varieties in April and May, a succession of flowers may be kept up from July till October.

Great stress is laid by some growers of the Gladiolus on the advantages of changing the ground it grows on every year. Of course, if no fresh soil is added, a change to another place would be desirable; but I find this is not necessary where plants from pots are planted-out, for they are always in fresh compost, and the Gladiolus roots do not go very deep, nor ramify much. When the Gladiolus is grown in rich stimulating soils, no doubt it will produce the largest and finest spikes; but I believe it will do this at the expense of health in the bulbs. I find the varieties grown in the borders and *Rhododendron* clumps, in poor sandy peaty soil, have the healthiest bulbs when lifted, and produce the most "spawn." The border in which I grow my seedlings has now been planted with them three years consecutively, and I can perceive no deterioration in their growth or disease amongst them. Every autumn, when the little bulbs are taken up, some light turfy soil,

mixed with very rotten deer dung, is dug into it, and at planting time, in April, a good dressing of sharp red sand is added. After flowering, and as soon as the leaves begin to change colour in October, the bulbs are taken up, and spread in a dry airy room, secure from frost. After they are thoroughly dried, the old stems are cut or clipped off, and the old dead corms removed, saving all the increase of the different varieties.

As there is a great difference in the shape of the flower in the Gladiolus and the way it is placed on the spike, owing to the *Ramosus* or *Floribundus* blood inherited by the different varieties of *Gandavensis*, I think the time is coming when only the best-shaped flowers and spikes will be tolerated at exhibitions of this flower. About twenty years ago, when Pansies were not of so good a shape as they are now, I had a tolerably good collection of the best sorts grown then. On the occasion of a visit from a neighbouring gardener he inspected my bed, and begged a few cuttings, saying his at home were all very "sow-lugged." Now we are in the transition state with the Gladiolus, and all "sow-eared" and winged flowers will have to be discarded in collections of show flowers.

In 1865 I flowered a seedling, raised from *Monsieur Blomet*, with all the petals nicely rounded, and of nearly the same size; in fact, quite a florists' flower. This seedling I crossed with *Queen Victoria*, and some others of the best-shaped flowers I had out at the time, and saved some seed from the crosses. This autumn the young bulbs will bloom, and I expect something good from them in shape and colour.

The autumn of 1865 was the best I have known for saving Gladiolus seed; for, with the precaution of setting the flowers, nearly every kind seeded freely in August and September. I shall have this autumn between five and six thousand bulbs to bloom, raised from seed sown in April, 1866, and it is astonishing how small a bulb will bloom late in the season.

I find it is the safest way in our uncertain climate to grow in pots some of the most expensive and finest kinds when seed is wanted from them; you can then keep them under cover and from the bees. It is quite a sight to watch a collection of Gladiolus in flower on a sunny morning, for every few minutes large lumbering humble bees will be sucking in the nectaries, and as fast as one is satisfied another will be ready to take its place.

In 1866 and 1867 I saved but little seed from my collection in the open air, and depended on bulbs grown in pots.

I find the best way of raising seedlings is to sow the seed in April on a south border, the soil being made very light with plenty of red sand and leaf mould. If the seed is sown in pans or boxes, the roots become cramped, and the small bulbs never grow so fast as in the open air.

As "B." enumerates some of the varieties he has found the best for shape and colour, I have done the same, and shall begin with the new sorts sent out in 1867. *Adolphe Brougnart*, flamed orange and red; *Elicien David*, cherry rose, striped carmine; *Lady Franklin*, white ground, flaked with carmine and rose—in my opinion the best shaped flower

sent out in 1867: Princess Mary of Cambridge, white, blotched with carmine; Sir W. Hooker, cerise, blotched with carmine.

Of the older flowers, without taking any notice of the year in which they were sent out, I consider the following as the best:

White or Light Varieties.—(Queen Victoria, Enrydice, Eleanor Norman, Shakespeare, and Milton, creamy white and flaked.

Red and Scarlet.—Meyerbeer, Maréchal Vaillant, Fulton, Ensign, The Colonel, Comte de Morny, and Napoleon III.

Cerise.—Bernard Palissy, Le Poussin, John Waterer, and Dne de Malakoff.

Lilac.—Anaïs, Belle Gabrielle, Empress Eugénie, and Madame Furtado.

Yellow.—El Dorado.

Rose.—Némie, Princess Clothilde, Penelope, Charles Diekens, and Madame Vilmorin.

The few I have grown of Mr. Standish's varieties, such as Eleanor Norman, The Colonel, and Ensign, I consider better shaped than the very best of the foreigners.—WILLIAM TILLERY.

THE ROYAL HORTICULTURAL SOCIETY'S SPRING AND SUMMER SCHEDULES FOR 1868.

THESE are now before the public, and, taken as a whole, are arranged in a very liberal spirit and on an extensive scale. In looking through them, however, there are a few things that strike one as being open to improvement.

First, greater inducements are offered to the trade than there are to amateurs and gentlemen's gardeners. Both of the latter have to compete at a great disadvantage with the trade for this reason—neither the amateur nor the gardener has the stock to select from that the nurseryman has, nor have they conveniences to produce plants or flowers, at an early period of the season especially, such as the nurseryman has. In either case, the amateur or gardener must have his houses filled to overflowing with subjects suitable for his family or his employer's purposes. There are very few places in the country where the gardener will find houses for the express purpose of growing plants, &c., for exhibition only—a thousand things are generally required from the gardener, whether he has few or many glass structures for horticultural purposes.

In glancing over the schedule of the show of Hyacinths and Early Spring Flowers, to be held on the 14th of March, the highest prize is offered to nurserymen only, and Class 2 being open, the highest in it is almost sure to go to the trade. The great point in their favour is that as soon as their stock of bulbs arrive in the autumn, they can at once select the very strongest and most suitable for their purpose, whilst the amateur or gardener must do the best he can with what he has sent him. The wording of the schedule, in my opinion, should therefore be reversed, allowing the gardener or amateur to compete on more equal terms with the nurseryman. This could be done by making a division for amateurs in Classes 1 and 2, which should read thus: "Class 1: 18 Hyacinths distinct, nurserymen, £2, £1, 15s. Class 1, amateurs: 18 Hyacinths, distinct, £3, £2, £1;" and Class 2, instead of being open, should be arranged in a similar way. This would give the amateur a fair chance, and the consequence would be that the number of exhibitors would be very much increased, thereby making the Society's exhibition much more attractive to the public, and consequently bringing together a much larger number of visitors.

A similar drawback again occurs in the schedule for the Show of Roses and Early Spring Flowers, to be held on the 18th of April. Nine classes out of thirteen are open, thus giving the trade nine chances to the amateur's four. Something similar occurs in most of the succeeding schedules.

At the Grand Summer Flower Show, to be held on the 2nd of June and three following days, in Class 1 there should be provision made for the amateur as well as the nurseryman, by giving another set of prizes of equal amount, thus confining the competition to nurserymen in one half of the class, and to amateurs in another. There are few amateurs who could compete, with any hope of success, with the fine collections of Messrs. Veitch, Turner, Fraser, Glendinning, and others. The consequence is that many fine collections are kept at home, and the exhibition loses much in effect and extent, visitors telling their friends who may have made up their minds to see the exhibition on the following day that it is scarcely worth their going to see, as the competition is confined to five or six exhibitors, and that on this occasion there are only the same plants they have frequently seen before exhibited again. Offer the amateur and gardener the same

advantages, and we shall see five times the number of plants exhibited, and a much greater amount and variety of talent and skill displayed by exhibitors. Fresh ideas will be introduced at each exhibition, and instead of seeing large one-sided masses of colour, we shall see plants that will be a credit both to the managers of our exhibitions and to cultivators as well.

The schedule for the great Rose Show, to be held on the 30th of June, is much more equally balanced, and shows at a glance that much more care and thought have been used in compiling it. At this show the amateur competes on equal terms with the nurseryman; and if this can be arranged for the lovers of the Rose, why is it not done for the lovers of plants generally? There are fully as many gardeners and amateurs who are quite as enthusiastic in the cultivation of other flowers. I need not here prolong my criticism, as, no doubt, this letter will be the means of drawing out the opinions of others who are more interested in the matter than I am.

I would remind the Council of the Royal Horticultural Society that greater punctuality is necessary in the distribution of their medals, &c., after they have been awarded to exhibitors. If these have to wait six, nine, twelve months, or two years before they receive their medals, much of the interest they would otherwise feel is lost, and the employer is apt to say, "It is of no use your exhibiting at the Royal Horticultural Society, for you will have to wait a year or two before you receive your prize."—F.R.H.S.

CONIFERE AT MR. MITCHELL'S, PILTDOWN.

IN the latter part of the summer of 1866 I paid a visit to Mr. Mitchell's nurseries at Piltown, in Sussex, a notice of which appeared in the Journal of September 18th of that year. The duration of the visit being limited to a few hours, the notes were necessarily restricted to a general review of the nursery stock, among which some fine specimens of Conifers were especially mentioned; but there are also many others of the same and different species that were then passed over. Among them are some of the largest and most perfect forms of particular kinds of these beautiful and stately trees that can be seen.

Nor was it by the particular specimens only that my attention was strongly interested, for the stock of the different kinds, in some instances to be counted by hundreds, was similarly remarkable for healthy growth, colour of foliage, and every essential requisite for forming fine specimens. I was, therefore, very desirous of ascertaining as far as possible under what conditions these invaluable subjects for the adornment of our gardens and grounds could thrive so uniformly well. If the Editors and readers will accept this as a sufficient reason for again bringing these nurseries before their notice, they will also judge how gladly I accepted an invitation from Mr. Mitchell to again visit Piltown, and make such further inspection and observations as my time permitted.

Doubtless, the soil and situation of Piltown are the paramount influences in producing the free and perfect growth of every kind of Conifer in cultivation there; but to these must also be added the vigilant care with which they are watched over by the proprietor, aided in no small degree by the intelligence and superintendence of his son. Conifers of some kind will grow almost everywhere. In situations less favoured than Piltown, if they do not thrive quite so satisfactorily, much may be done by cultivation.

It is a mistake to suppose that having selected and planted out one or more of the many beautiful kinds now so easily to be obtained, there is an end to all further care about it, except to those easy-going people who are indifferent whether their plants become specimens worth regarding hereafter or not. Our (the gardening) world is not so quietly ordered that we can treat any class of subjects as an exhibition of waxwork, the only difference being that the vegetable figures are expected to grow larger. Such at least is not my limited experience as regards Conifers, especially when the plants are young, although admitting the great fact that the many thousands planted out annually for ornamental purposes only, receive little or no attention after planting, and that very many of them do well. It does not follow, however, that many might not do better, even if it is prudent sometimes to "let well alone." They, therefore, in common with every class of plants taken under man's care, require a certain amount of cultivation according to their habit and age; it is a requisite to all improvement, and even to the maintenance of the natural condition of kinds brought from distant lands.

To note in this place the different points of attention that might be judiciously applied to the various species of Conifers, especially while the plants are young, would be to digress too far from the subject of this paper. I may, however, add that having taken upwards of eighty kinds under my care, I have found that the growth of young plants can be promoted, and their symmetry improved, by carefully studying their requirements. This study mainly consists in knowing the kind of soil in which they are found in their native home, the altitude above sea level at which they thrive best, the mean annual temperature, and the extremes of winter and summer. To judge from these data (some of which may be easily ascertained for practical purposes from any of the excellent physical atlases that have of late years been published) the probability of the species succeeding or the reverse, will save much after-trouble and disappointment. This is particularly applicable to the Cypress and its allies (Cupressineæ), as *Thuja*, *Biota*, *Retinospora*, and *Juniperus*. Among these and some of the *Pinus* tribe the liability to suffer from extreme cold, high winds, and unsuitable soil, renders more care necessary than for most of the *Abies*, *Pinuses*, &c., found in latitudes corresponding to our own, and which scarcely require any attention.

At Piltown many of the most important ornamental Conifera find the elements necessary to their well-being. The soil is a deep, rich, friable loam, naturally well drained by the gentle slope of the nursery on one side towards the S.E., and in another direction towards the S. It retains sufficient moisture in hot and dry weather to promote free growth, without causing the temperature to sink too low in the cold weather that proves so fatal in this country to the Conifera of warmer climes. Instances will be noticed presently. The pure bracing air of the downs, tempered by the vicinity of the sea, less than twenty miles distant, is also an additional circumstance eminently favourable. With these preliminary remarks I now offer some notes of the principal kinds growing there.

Araucaria imbricata claims the first notice on account of the size many of the specimens have attained, their number, and their perfect growth. The largest, near the entrance gate to the nursery on the east of the road opposite Mr. Mitchell's residence, is probably the finest specimen in England. Its height is upwards of 40 feet; the circumference of the trunk near the ground is 6½ feet; its lowest branches springing from the trunk are 11 and 12 feet in length, thence gradually and uniformly diminishing in length towards the top. The ramifications of each branch are similarly uniform and equidistant, most numerous at the extremities of the main branches, and by their weight give these a graceful curvature and somewhat pendulous habit (the true character of the *Araucarias*), the curvature and pendulous character becoming less and less towards the top in proportion to the length of the branches. The tree bore cones last year, but none this season. From its height and colour of foliage, this magnificent tree is a conspicuous object from nearly every part of the nursery. It was planted about twenty-six years ago, and it is manifest that its progress has been uninterrupted under every circumstance of a variable climate.

The next tree, on the other side of the gateway, is about 30 feet in height, resembling the first in all respects. In a line with these two grand plants is a continuous row of upwards of sixty others, varying in height from 20 to 30 feet. In front of them, a well-kept roadway runs the whole length of the line; on the other side of this roadway, and opposite the first row of *Araucarias*, is another line of upwards of forty more of like magnitude, thus forming an avenue of unexampled interest. A single specimen of *Araucaria* is eminently picturesque, always causing admiration when the specimen is well grown. When, therefore, so large a number of this remarkable South American Conifer is found at one place an extraordinary feature is presented to view, so striking, so unusual in this country, that the scene dwells in the memory as a strange sight seen in a foreign land, or read of in books relating distant travel. This impression is very forcible at a point where, owing to the nature of the ground, the pathway and avenue are diverted from the straight line; the space behind the *Araucarias* on either side being planted with various other Conifers and exotic shrubs, all traces of native vegetation are shut out of view, and the illusion of being suddenly transported to some unknown region, if indulged in for the moment, is complete. It is gratifying to record the fact that the intense cold of last winter, so disastrous to many *Araucarias*, did not inflict the slightest injury on these noble plants. Mr. Mitchell has many other young plants in excellent condition.

Biota (Thuja) aurea.—This Conifer has become such a ge-

neral favourite, that plants of it are now met with almost everywhere, and in every nursery the stock of it is generally found to be conspicuously planted, or in such numbers as to attract attention. Piltown is no exception to this rule, great numbers in different parts of the nursery attest the universal demand for this pretty ornamental shrub. The attention of visitors is at once arrested by the two fine specimens near the great *Araucaria*. These plants are now about 5 feet, or a little more in height, with a circumference of 18 feet; their growth is perfect throughout, and in form spheroidal almost approaching globular, the diameter being but a trifle greater than the height. *Biota aurea* is one of the handsomest lawn plants ever introduced, being equally suitable for small as for large plots, in the latter case more than one specimen might be planted. It may be frequently noticed that as *Biota aurea* increases in size and age, the bottom becomes thin, thereby exposing the stems of the shrub. When this is the case, it will be found in many instances that the roots have penetrated deeply into a barren subsoil, whence they can derive no nourishment. I have found this defect to be partially checked by renewing the soil around the plant. In nurseries this defect is almost entirely avoided by the occasional transplanting of the stock.

Thuja gigantea.—There is a question of nomenclature affecting this species which it is very desirable should be set at rest. It has also been called *Libocedrus decurrens*. According to Mr. Berkeley, the lamented Lobb, who discovered this and the *Thuja* hitherto known as *T. Lobbi*, did not name these kinds as we have them, but owing to some oversight the names became as it were transposed, the specific "*gigantea*" being applied to the kind *Lobbi*, and *decurrens*. Judging from the habits of the two species, the rapid growth of *T. Lobbi* sometimes increasing its height as much as 3 or 4 feet in one season, would the more readily suggest "*gigantea*," than the slower and more compact growth of the other. Every honour should be paid to the memory of Lobb, who may be regarded as one of the martyrs in the cause of botanical and horticultural science. His name can with propriety be retained for one of the kinds. Why *Libocedrus* should have been applied does not yet appear sufficiently clear, unless there are points of difference in common with the other species still known as *Libocedrus*, to warrant their separation from the *Thuja*, as a distinct genus. The specific "*decurrens*" is objectionable, as not expressing any property in the kind, nor of botanical usage that I am aware of. Synonyms should, if possible, be avoided; and it would be an immense gain to botany if some competent authority could be established, not only to revise, but to simplify existing nomenclature—a task well worthy of being undertaken.

The large specimen at Piltown of *Thuja gigantea*, or if we are to call it aright, *T. Lobbi*, is now about 13 feet high; the circumference of the branches at half that height is much greater than at the bottom. I am inclined to believe that this is not the general character of the tree, having never observed it nor any tendency to it in other specimens. This is, however, the largest I have ever seen. The deep glossy green of its foliage renders it a most beautiful and picturesque object at all seasons; its hardness has also been fully established. It appears to be shy of removal, probably on account of scarcity of rootlets. I have to regret the loss of a good plant 6 feet high from this cause. It might be overcome by grafting on a more vigorous kind, but this process is very objectionable in many Conifers.

Thuja sibirica, or *plicata*, for I believe them to be identical, is too well known to need description. It is more valuable for contrast with other Conifers in colour of foliage and formality of growth than as single specimens. Mr. Mitchell's largest is about 12 feet high, quite conical in shape—the characteristic of the species. I know of no Conifer so frequently planted where it ought not to be as *T. plicata*, the colour of its foliage only showing to advantage when contrasted with other species. A dwarf variety of it, called *T. minima*, is deserving of a place under similar restrictions.

Cupressus Lawsoniana.—The hardiest and most graceful of all the Cypresses proper, and therefore the most valuable of them for ornamental purposes. From its readiness to produce seed, even in a young state, it might become as common as Larch if it possessed any economic value, but with the exception of some of the *Junipers* none of the Cupressine yields timber applicable to any general purposes, being far surpassed in this respect by many of the *Pinuses* and *Abies*. Like other species of this family, it appears to be susceptible of change under cultivation and on different soils, showing various forms

of variegation and colour of foliage. Specimens at Piltown are numerous, and seedlings from them occupy a whole quarter.

Juniperus ericoides is one of the specialties of Mr. Mitchell's nursery. It is really a very pretty tree, and deservedly increasing in favour. Less formal and rigid than the Irish or Swedish Juniper, the Heath-like form of its foliage during the period of growth gives it a very distinctive character. I have seen this plant inserted in more than one nursery catalogue under three different names. This ought not to be.

Juniperus virginiana variegata.—Excepting the Holly and Euonymus, the best, most distinct, and most beautiful forms of variegation in hardy ligneous plants undoubtedly occur in many deciduous ones. The variegation in Coniferae seems to impart an unhealthy appearance to the plant that cannot command even the ordinary epithet of "pretty," especially at the time when the variegation is most wanted—that is, in winter. Such, at least, is my impression of it. Nevertheless, it would be unfair to pass unnoticed the variegated form of the old Red Cedar, which at Piltown and in other nurseries shows a marked contrast with other kinds, and is one of the most distinct in cultivation.

Cedrus deodara.—If we were to assign social positions to the different kinds of Coniferae, the Deodar would claim the rank of royalty, as one of the grandest and most majestic trees known. Yet its high rank would not have brought it under special notice in this place were there not some evidence respecting it desirable to be obtained. Its perfect hardiness is now doubtful, for large plants of it 10 and 12 feet high in Messrs. Ivery's nursery at Dorking were killed to the ground last winter, and had to be dug up; but there the temperature fell to several degrees below zero. At other places we hear of its having been much injured. My tree, about 18 feet high, had scarcely a leaf browned, but it had not to endure much more than 20° of frost. What is its limit of endurance?

Another question connected with it is of some botanical interest. Is it a distinct species, or only a variety of *C. Libani*? As it increases in age it appears to approach more and more closely to *Libani*, especially as regards foliage—a circumstance first pointed out to me at Linton by my respected friend Mr. Robson, and, I think, noticed by him in these pages. At Piltown the soil, &c., doubtless influence its growth, but the largest plants, 15 to 20 feet high, are forming large spreading branches precisely after the habit of *C. Libani*. Difference of locality where found produces differences in kinds, which may disappear when both or all are brought together, as it were, on neutral ground, remote from the original districts. There is a problem to be solved which may not unlikely diminish very sensibly the long lists of species, alike burdensome to the memory of the followers of science as it is perplexing to the uninitiated.

Cephalotaxus Fortunei.—Here, again, is a question of nomenclature, there being two kinds under this name—one called the male, the other the female—but upon what grounds? Mr. Mitchell's largest plants of both kinds are well-grown specimens, showing their habit and character very clearly. The species hitherto known as the male has this year produced a quantity of fruit, the berries being in size and form somewhat like those of the common Aucub, and, when I saw them, green and hard; the flowers were not observed at the proper time, otherwise the sex of the plant would have been determined. *Cephalotaxus* is a useful addition to our Yews, forming a compact and circular bush of moderate growth, with foliage bolder, and in one kind lighter in colour, than any other of the family. It will be seen to best advantage in large collections, planted singly or in pairs apart from other trees. Like all the Taxads, it will evidently bear pruning to any extent.—ADOLPHUS H. LEST.

in-doors by a wet or dry atmosphere on the production of pollen; but I am decidedly convinced, from careful watching, that in a dry hot atmosphere out of doors I could seldom obtain pollen to operate with, whilst on a cool day, with a rather moist atmosphere, I have found pollen always abundant. Therefore, as pollen is the agent needed for fructification, I consider that what holds good out-doors in producing the desired effects should be the aim of the cultivator in an artificial temperature.

—WILLIAM MELVILLE, *Dalmeny Park*.

THE CULTURE OF TREE MIGNONETTE.

It is very easy of culture, and by exercising a little judgment in the sowing of a few seeds at different seasons of the year, and care in cutting away the dead flowers as they appear, it may be had in bloom in the conservatory every month in the year. It may be formed into various shapes according to the taste of the cultivator. Some prefer growing it in the shape of a cone, with one plant in the centre of a pot, the stem of the plant tied to a neat stake, the side shoots regularly stepped and trained, and the flowers pinched-off as they appear, till the plant has attained its desired height and size. Others choose to have five or six plants in a 32 or 24-sized pot, and when these are neatly trained they are very useful, and never fail to be admired at this season and onwards for several months.

I have grown a few very pretty standard Mignonette plants, and as they are generally much admired, I will briefly detail their cultivation.

About the end of March seed was sown in several small 48-sized pots, placing three or four seeds in each. The compost used chiefly consisted of decayed turf pulled to pieces with the hand, but not riddled, intermixed with horse droppings passed through a fine sieve; sand being added to keep the compost open. In a mixture of this description, Mignonette seems to thrive well and bloom freely. When the seeds were sown the pots were placed in a cold pit, and as soon as the seedlings were large enough to distinguish which were the largest and strongest plants, the best were selected to remain, and the others thinned-out, and thrown away. As soon as the pots were filled with roots, but before the plants became pot-bound, these were moved into 6-inch pots, and in this size single plants will form good heads of bloom if occasionally assisted with weak manure waterings.

Some prefer larger-sized pots in order to grow extra-strong plants, but I rather like 6-inch pots, for they can then be placed in a small vase, and used occasionally for dinner-table decoration.

When the plants were several inches high, a neat stake was placed to each to keep them erect. The side shoots as they appeared were carefully pinched-off near to the main stem, carefully leaving one or two leaves at the base of each successive shoot to strengthen the plant, and keep the roots active. This I consider rather important, as, if the plant were denuded of all its leaves as the stem progressed, its health would become impaired, and premature decay would set in. Much the same course was pursued until the plants had attained the desired height.

As the plants became established they were removed from the cold pit, and placed on a bed of coal ashes out of doors. They were stopped at heights varying from 16 inches to 2 feet, and as the flower buds appeared these were regularly pinched-out, to force the plants to form a neat bushy head, until about the end of September, when each was furnished with a profusion of shoots, which were allowed to expand their bloom. By pinching-off the decayed blooms, the plants will continue to flower throughout the winter months; but to secure the perfection of fragrance, they require both sun and air, and, consequently, when convenient, should be placed in proximity to the openings by which the air is admitted into the houses, —QUINTIN READ.

HAVE MERCY ON YOUR PEAR TREES.

I much regret to see, in your number of the 2nd inst., that my old instructor in Rose-budding, Mr. Charles Ellis, of Upper East Sheen, has been guilty of the great imprudence of allowing 276 fruit to ripen on a young Beurré Clairgeau Pear tree, only 11 feet high; and, not content with this, actually publishes the fact, with the view of encouraging others to go and do similarly.

After profiting by Mr. Ellis's instructions in Rose-budding,

IS A DRY OR MOIST ATMOSPHERE THE MORE CONGENIAL FOR SETTING MUSCAT GRAPES?

Upon this subject many gardeners differ, the majority, however, advocating a high temperature and dry atmosphere when the Vines are in bloom; some few go to the reverse extreme by even syringing the Vines when in flower.

Consulting what I consider the nearest approach to Nature's laws in all my experiments in cross-fertilising varieties of fruit trees, flowers, and vegetables, I have had the opportunity of being in search of pollen frequently in all sorts of weather. These experiments having been made in-doors and out, during bright and sunny, dry and humid, cloudy and wet weather, I must say I have not been so sensibly convinced of the effects produced

I went on to fruit-growing, and by diligently carrying out the directions contained in M. Du Breuil's "Treatise on Arboriculture" (French edition), I have now an excellent collection of Pears. I have received 18s. a-dozen from a fruiterer in Richmond for Easter Beurré, and never less than 12s. a-dozen for those I wish to part with.

Quality, tested by actual sale, should be the object of all amateurs, and "the quality of mercy must not be strained" by such an exaction as twenty-three dozen from a young tree only 11 feet high.

When, next year, Mr. Ellis's fruit room is destitute of Beurré Clairgeau Pears—as destitute it will be—I will endeavour to supply his "ripe" wants from young and vigorous plants of about the same size, which are permitted, and rarely fail to produce, year by year, five or six dozen first-class fruit.—HENRY W. POWNALL, *St. Margaret's, Trichinopoly*.

WHAT IS A CORDON?

As an article in your last impression attempts to answer this question, and gives a definition of the term entirely at variance with the commonly accepted one in France, you will perhaps allow me to state what a cordon really means in the language of French fruit-growers generally. We know it is one of those terms that have many meanings, and hence occurs the twisting it has received of late. Clearly what we want is to know the generally accepted meaning of the term. To say, as you do, that it means any form pruned on the spur system, is quite erroneous, and so is Mr. Bréant's definition. The Peach, when trained *en cordon* in France, has its branches laid-in the same as those of trees of the larger forms. This is true of Peaches whether grown in or out of doors, the only exception being the system of Grin, in which an attempt is made to do without the nailing-in. This is adopted in but very few places, and is not liked by the French fruit-growers. For us it will prove completely useless.

You quote Professor Du Breuil. I have now the last edition of his work before me. You say he invented the term to "express certain modes of training which we have called the spur system," &c. The truth is, he invented the *form* for a purpose which he very clearly expresses. Struck with the long time it takes to cover walls with the larger forms, even when under the best management, and other difficulties and complications which he enumerates, it occurred to him that the adoption of a simpler form would be desirable. At page 329 of the very latest edition of his book (1868), he says "*Frappé de ces inconvénients nous avons cherché à y remédier en imaginant de nouvelles formes qui, beaucoup plus aisées à établir que toutes les autres, promettent de couvrir régulièrement toute la surface du mur dans un laps de temps beaucoup plus court, et fissent donner aux arbres leur produit maximum beaucoup plus tôt, sans abréger leur durée.*" These new forms he called cordons. The spurting-in of these in the case of the Pear was exactly the same as that applied to the branches of the larger forms for years before. Therefore it is quite a contortion of the author's meaning, and tends, moreover, to confuse the mind of the reader, to say that the term was introduced simply to "express what we call the spur system." I think the French language contained a name for that a long time before the Professor's appearance, and he certainly did not invent the term to supplant what they were previously known by. At page 480 of the work above quoted is a figure of the Peach *en cordon*, with the wood laid-in in the ordinary way. From the greater degree of vigour induced by the tree being confined to a single stem, the wood to be laid-in is often more profuse than from a branch of a large tree. At page 483 he even gives a figure of a very neat mode of covering a wall for cordons, and in which there is special and careful provision made for the tying-in of the young side branches of the Peach.

I, "one of the disputants," did not use the term cordon "in a very limited sense, conveying the idea that it referred only to the manner in which Apples and Pears are trained to form edgings to garden walks." I said especially that there were many forms of cordons, but that that particular one was the best for general use. With your general estimate of the cordon system I quite agree, but think you will yet find the low edging cordon excellent when well managed, and am certain that it has distinct merits for this country. Against walls, it is true, the cordons cover the space quickly from being usually confined to simple stems; but then their energies are confined too much, and, besides, the expense of planting trees so closely

together is objectionable. A better way to attain a considerable variety from a small space and cover the wall quickly, is to adopt forms with four or five ascending stems. This has been recently done on a large scale at Versailles, and with an excellent result.

By the way, I have looked through Du Breuil and other good French authors, and in none of them do I find the word cordon applied to any large form of tree; but I have just seen a very clear definition of what it is in M. C. Baltet's book on the Pear—"Le cordon est la forme réduite à sa plus simple expression; une seule tige garnie de brindilles fruitières. L'avantage du cordon est de simplifier la charpente et de réunir une collection de variétés dans un espace restreint."—(*Culture du Poirier*, p. 20.) Therefore the term cordon does apply to a particular and well-defined class of forms, and is not a particular mode of pruning, as is abundantly shown by the work of the inventor of the system, who is, I may add, the leading professor of fruit-growing in France. The French certainly do not apply the term to indicate a tree pruned on the spur system; and it is clear enough that the English have never done so. That they will adopt the term cordon in lieu of the old one is most unlikely in either case; but unless they depart widely from what is generally accepted in such matters, they must call the forms embraced under that name by the expressive term given them by their originator—a term widely accepted on the Continent.—ONE OF THE DISPUTANTS.

[We have only to repeat that M. Du Breuil uses the word "cordon" generically, and not specifically. In the edition of his book so long ago as 1846, he there defines it as "the primary ramifications of the stem, and which are generally simple;" and in his edition of 1859 he says, "The forms of this group [cordons], are all composed of horizontal, oblique, or even vertical cordons issuing directly from the stock of the tree, or supported from a stem more or less elevated." The various kinds he describes are the simple horizontal, the simple vertical, the simple oblique, the horizontal unilateral, and the palmette cordon. Of the last a figure is given which represents a tree with no less than *twenty-two* horizontal branches or cordons upon it. What is that if it is not "a large form of tree?" The quotation our correspondent has given above from M. Du Breuil is most unfairly stated, inasmuch as he quotes just enough to suit his own purpose, and then he says, "These new forms he calls cordons." Now M. Du Breuil does no such thing, as our correspondent well knows. What he does say is, "We have given to this new disposition, contrived by us for the Pear tree in 1852, the name of *cordon oblique simple*." So much for M. Du Breuil, the eminent professor.

Then there is that skilful old pruner, M. Lepère, who, after all, we believe to be the originator of the term, and not M. Du Breuil. If our correspondent will turn to his book he will find eight pages devoted to "*Palmette Peach trees with horizontal cordons*," and the text illustrated on plate v. M. Lepère's definition of cordons is, "these are the secondary branches of the Peach tree formed *en palmette*." Surely this cannot be applied to M. Baltet's cordon, which is a solitary stem, furnished with fruit-bearing *brindilles* (elongated spurs), and which has no branches at all.

M. Carrière, also, an author of note and of authority in French gardening matters says, "Particularly in arboriculture, every part of a plant trained a little horizontally is called a cordon, and on which branches are placed which are kept short by pruning, and to which the name of *branches couronnées* is given. In a handsome cordon the *coursons** are well directed, they are well displayed—that is to say, that they have no ramifications, and that they do not form what may be called bushy masses. Cordon is applied also to Pear trees, Apple trees, or any other tree when it is subjected to this form."

Our correspondent has correctly quoted M. Charles Baltet, a respectable French nurseryman, who, like himself, uses the word in its most restricted sense; his cordon being the *cordon simple* of M. Du Breuil. Whatever loose application M. C. Baltet or "the French fruit-growers generally" may make of the term, is not to the purpose; our acceptance of it is not M. Baltet's, but that of those eminent arboriculturists who for thirty years or more have devoted their attention to the inven-

* *Coursons* are in Peaches the analogues of the spurs in Pears or Apples, produced by close-pruning and pinching in the same way as spurs are. We submit this note with great diffidence to our correspondent after his authoritative assertion that our and Mr. Bréant's definitions are "quite erroneous;" but we cannot help informing him, for he does not seem to know, that the modern system of close-pruning the Peach in *branches couronnées*, including the little laying-in that is required, is totally different from the old system of "laying-in" to which we referred.

tion and perfecting of this modern system of pruning; and surely neither M. Baltet nor our correspondent will be inclined to dispute the interpretation given of the cordon by the authorities we have quoted, and by whom the term was defined and made use of before either of them could have given much or any heed to the subject.

We hold, therefore, that a cordon is a simple branch close-pruned or spurred, and not a tree, except when that tree consists of one simple branch only, and then it is a *cordon simple*, and not simply a cordon.

We will shortly furnish illustrations of the various forms of trees trained on the cordon principle.]

YUCCAS AND THEIR PROPAGATION.

I HAD lent me the other evening the last July number of THE JOURNAL OF HORTICULTURE. Mr. Robson's remarks on Yuccas (page 57), recalled to my recollection some experiments relative to these plants, which were carried out here about eight years ago. Having had no opportunity of seeing any subsequent number of the Journal, I am at a loss to know if any additional remarks have appeared in reference to their propagation. As the results of those experiments, together with my subsequent experience, do not correspond with Mr. Robson's assertion that "the Yuccas increase but slowly," I send you some particulars respecting the experiments and the results.

On each side of a long terrace walk there stood a row of overgrown, large-headed Yucca plants. Although some of them produced flower spikes almost every year, yet from having become top-heavy they never looked neat. Some were bent one way, others another, and some were propped-up. At last they became unmanageable, and were condemned, the stems being sawn through just above the surface of the soil. They were then planted, some with the stems entire, others with the stems shortened. The operation was similar to planting a post for a gate, a good ramming included.

The object of this experiment was to ascertain if the plants would grow in that state, and, if they grew, to see if they would flower more regularly. If those two points could be gained we hoped to succeed in forming dwarf, compact bushes of Yuccas, with a dozen or more spikes of bloom on each. For some time the plants were sorry-looking, and some of them were soon dressed in mourning. An occasional sneer was indulged in when the operation was going on; but now the laugh was outright. Nevertheless, some of them grew, others died, I fear from over-ramming, or careless ramming, which bruised the bark of the stems and caused them to rot. Those, however, that grew have not flowered as was expected. Since then we have put in heads of plants with naked stems more carefully, and they seldom fail to grow. The roots come out thickly all over the stem. Those that were planted so that the shoots which formed the head came in contact with the soil, in two years furnished a good supply of young plants. Some plants rooted in this way are now 3 feet high. In two or three years they will have an appearance which I consider far more effective than that which they will present after they have flowered, and have become large-headed and top-heavy.

"How do you manage to obtain so many young Yucca plants?" said a nurseryman to me one day, "I find them very slow." I then related to him the following experiment, which proved them not so slow of propagation as it would appear they are generally imagined to be.

In digging-up the roots of the plants we had sawn off, it occurred to me that they were likely to sprout if lightly covered with soil. I had, therefore, all the roots of the size of one's finger, or larger, collected, cut into lengths of 3 or 4 inches, and placed in a border, covering them with just sufficient soil to hide them. This was done in the month of May. My expectations were more than realised, for I had two and sometimes three shoots on a bit of root. We have had an abundance of Yuccas ever since. Some plants thus raised are now 2 feet high to the tips of the leaves. Even some of the very small bits that were thrown away grew, although several of them were fully exposed. Any one having an old Yucca plant can, by digging around it, and taking some of its largest roots, soon secure a supply of young plants.

The Yuccas treated as above were plants of *Y. gloriosa*; but I have two or three other sorts, and I found them quite as easy to propagate in this way. I advise those who try this

mode of propagation to place a few twigs over the roots when planted to prevent these being disturbed.—H. MILLS, *Enys, Penryn*.

REVIEW.

The Gardener's Almanack, and Poultry-Keeper's and Apiarian's Calendar for the Year 1868. Edited by G. W. JOHNSON, E. HEWITT, and T. W. WOODBURY. JOURNAL OF HORTICULTURE Office, 171, Fleet Street.

In this Almanack we have a great desideratum supplied, which is none the less valuable for its combining so much that is useful to the confraternity of gardeners, poultry-keepers, and bee-keepers, who are very often "*tres juncti in uno*." Here, under the same cover, and for the moderate price of one shilling, each and all will find much valuable information special to their separate hobbies, besides the usual information given in all good almanacks perhaps fuller than usual.

The "Gardening" calendar (if it may be so called), supplies an essay every month on such subjects as the following:—"Vines in pots," "Fuchsias," "The Oleander," "Potting and Repotting," "Melons," "Vines in a Greenhouse," "Pelargonium Cuttings," "Clerodendrons," "Roses in Pots," &c. There are also "Lists of Flowers for Amateurs," the best of each kind, with descriptions.

Then there is an essay on "Poultry-Keeping," by Mr. Hewitt, with remarks on "Prevalent Faults at Poultry Exhibitions," followed up by an admirably arranged table for memoranda for every day in the year. Here at a glance the poultry housewife can see what kind of fowl has been sat, on what number and kind of eggs, date of hatching, number of chicks, and how many reared, with a daily list of eggs laid by any and every variety of fowl. The arrangement is completeness and perfection itself.

In the Bee-keeping department we have a Calendar of Operations for every month in the year, with a blank page for each month of the busy season for the jotting-down of memoranda. The calendar is most complete and most carefully written. Whoever follows its instructions with docility can hardly fail of success. It is specially designed for the scientific bee-keeper, as we might expect from the pen of Mr. Woodbury, the first apiarian of the day; but there is matter of profitable instruction for all—learned or unlearned. There are capital illustrations of the bottle feeder and of the mode of securing and fitting combs to the frame bar.—D. & W.

METEOROLOGICAL NOTES AT LINTON PARK.

KENT, 1867.

	Rain in inches.	No. of rainy days.	No. of frosty days.
January	5.95	18	21
February	1.53	17	5
March	3.42	23	23
April	1.67	18	3
May	2.35	11	5
June	0.85	9	..
July	4.53	16	..
August	1.55	10	..
September	1.43	12	1
October	2.65	16	7
November	1.26	8	10
December	2.42	18	19
Total	26.71	176	94

The greatest fall of rain in one day was on July 26th, when 1.51 inch fell. The greatest number of consecutive dry days occurred from the 19th of June to the 2nd of July, and also from the 2nd to the 14th of November, both twelve clear days.

The hottest day was August 14th, thermometer 90°.

The coldest day was January 5th, thermometer 10°.

The readings of the barometer taken at noon each day, and, consequently, not likely to be either extreme, were as follows:—

Maximum, 30.42 inches, on March 2nd.

Minimum, 28.23 inches, on January 8th.

The winds, as taken at noon show during the year, E., thirteen days; S.E., 21; S., 80; S.W., 72; W., 46; N.W., 27; N., 59; N.E., 43; and two not determined.

As compared with former years, the rainfall of 1867 is about half an inch above the average of the preceding twelve years, and the number of rainy days nine in excess. The winds from S., and S.W., have been more prevalent, especially those from the S., while the days on which it blew from N.E. were much

fewer. The number of frosty days is about the average, and in May almost unprecedented. An early frost on September 25th reduced the period between spring and autumn frosts to exactly four months, an unusually short time. Certainly the frost of the latter period was not quickly followed by others equally sharp, but for the most delicate of out-door plants the autumn was early. *Pelargoniums*, *Gazanias*, &c., continued tolerably fresh up to the beginning of December.—J. RONSON.

ASPARAGUS CULTURE.

(Continued from page 22.)

THE second year the plants cannot be too liberally watered with liquid manure. Once every fortnight is not too often to give a good soaking, and at every alternate watering 1 lb. of salt may be dissolved in each three gallons of water. The waterings may commence in June, and end by the middle of September. Weeds ought to be removed as they appear. In autumn the stalks, when withered, should be removed by cutting them off close to the surface, and the weeds being cleared off, the beds should be forked over and the loose soil drawn off into the alleys. The beds are then to be covered with 3 inches of well-rotted manure, which by February will be considerably reduced; then soil from the alleys should be thrown out over the beds so as to cover them 2 or 3 inches thick, and the alleys are filled with half-rotten manure quite level with the beds. In March the beds are forked over, not going so deep as to injure the crowns of the plants. The alleys are to be dug, or rather trenched, so as to bury deeply the manure put into them, and when the ground is in good working order the beds are raked and made level, and the edges straightened. A dressing of salt ought then to be applied, so thickly as to render the surface white, or it may be at the rate of 1½ to 2 lbs. per square yard. This completes the second year's culture, or brings us to the end of the second year after planting.

In the third spring the Asparagus will be of a size fit to cut, but I would recommend allowing the plants to grow untouched another year, and more and finer heads will be secured. The summer culture for the third year is not different from that in the preceding season, only when the shoots are from 18 inches to 2 feet in height the weak ones are cut clean away, four to six of the strongest shoots being left on each plant. The strong shoots, having the lead, will thus attain more strength, and will keep down the weak shoots, and the beds may be gone over again early in July, removing any weak shoots that have made their appearance since the first thinning. Early in May another dressing of salt is given, and the beds are well watered with liquid manure once a fortnight.

In autumn, as soon as the ground is cleared of dead stalks and weeds, all the loose soil is drawn off the beds into the alleys, and the beds dressed with 2 or 3 inches of rotten manure. In February soil from the alleys is thrown over the beds, covering these 3 or 4 inches thick; and the alleys, which, from the removal of the soil to put over the beds, will be considerably lowered, are filled up quite level with the beds with the half-rotten manure usually found in the outsides of hotbeds. This is trenched into the alleys and left until March, when the beds are forked over, not going so deep as to injure the crowns, and the soil is well broken and made fine. The beds are then raked, drawing off a considerable portion of soil into the alleys. A dressing of salt is given, as in the preceding year, and again towards the close of the cutting. The heads will be large and fine in the fourth spring, and the beds may be said to be in full bearing.

In cutting, a little of the soil may be taken from beside the shoot with the knife (an Asparagus knife is best), which is then thrust down, but not so as to damage the crown or other shoots pushing up, and turning the edge of the knife towards the shoot, it is cut or sawn off. I prefer to cut off all shoots as they appear, when of a sufficient length—6 to 9 inches, until the end of May, unless the plants are weak, when a strong shoot is left to each plant, and this promotes root action, and is conducive to vigorous growth. Half the beds are not cut after May, and dependance is placed on these beds for the first cutting in the following spring. From the remainder of the beds the heads are cut until the 20th of June, when cutting ceases altogether, but early in the month two shoots, or at least one strong shoot, should be left to each plant, but all the others of any size are cut up to the time named.

The seasons have a great effect on the growth of Asparagus. In early seasons cutting will commence early, and in that case

it ought to be discontinued sooner than when the season is a late one. The coming-in of Peas is generally taken as the time when the cutting of Asparagus may cease; but I fear there is often more of convenience in this than any regard to the benefit of the Asparagus, and in some places where the demand is of long continuance the heads are cut later than is good for the plants. The vigour of the plants ought also to have an influence as to the time when cutting should cease, for if weak they ought to be allowed to grow early and make as much foliage as possible, thereby acquiring greater vigour for another year.

The culture in succeeding years is the same until the beds are worn out. Good culture and well-made beds at the commencement will keep Asparagus in full bearing for twenty years, and in some cases much longer; but when the beds are failing others should be made, so as to prevent a deficiency in the supply.

The mode of culture described, I may be told, is a very old one; but by it good Asparagus has been and is now grown. There are other modes of culture, which some may think I might have noticed, rather than have placed before your readers a system practised so long and so extensively; but my object has been to explain how good green or unblanched Asparagus can be grown.

I omitted stating that the dressing of manure in autumn may be of pigeon's dung, sand, and seaweed in equal quantities, or the first and last without either of the others, in place of the dressing of rotten manure; also that the shoots should be thinned early in July, leaving no more than four or six of the strongest to each plant, these only being allowed to mature.

In order to produce blanched Asparagus the preparation of the beds and planting are not different from the practice already described, nor, indeed, is there any difference until the plants are strong enough for cutting; then a quantity of sand or very light soil is placed in the alleys, and the beds are covered with it 3 inches thick. It is quite soon enough to put the sand on the beds when the heads are just peeping through the soil; and when they show through the first layer of sand, put on another and another as the Asparagus appears, until the sand is about 8 or 9 inches thick. When the Asparagus again makes its appearance cutting is commenced by drawing away the sand, and cutting the heads level with the surface of the beds, or about 8 inches long, and the sand is levelled again after each cutting. In the autumn following, the sand or light soil is drawn off into the alleys, and left until spring, when it is again used as above described. The beds have in autumn a dressing of rotten manure, and the rougher portion of the soil is raked off in spring before covering with sand.

Another mode of blanching Asparagus is to cover the beds in March to the depth of 8 or 9 inches with half-rotten leaves, the cutting taking place when the heads are just peeping through the covering, which should be carefully removed from the stems, and after cutting replaced. In autumn the leaves are drawn off into the alleys and dug in, and the beds receive a dressing of rotten manure 3 or 4 inches thick.

The plants for blanching are best grown in rows 30 inches apart, and the plants 1 foot apart in the rows. The object of blanching Asparagus is to have it white, tender, and finer-flavoured.—G. ABBEY.

NOTES FROM FRANCE AND ITALY.

Mr. Ronson, in writing on Mistletoe, stated, "It is said that it grows in the north-west of France." I may inform him that if he journey by railway from Dieppe to Rouen he will be able to see it growing abundantly on the trees on his left. I cannot tell him what the trees are, but I take them to be a kind of Poplar.

Some time ago I was making a knapsack tour in the south; and on the hills above La Grande Chartreuse, on the north side, I found a wild Dog Rose with a most remarkable perfume. I had just come from the monastery, where I had tasted the celebrated liqueur which bears its name, and I was so much struck with the strong resemblance of this Rose's perfume to that of the liqueur, that I felt satisfied (and my travelling companion was of the same opinion), that it formed an important ingredient in its manufacture. I obtained a good root, which I carried for some weeks most carefully in my sponge-bag, and brought home in a healthy growing condition, but the want of care or skill of the gardener to whom I gave it for planting, caused it to be lost. If you make this known to your

readers no doubt some of those who go that way will procure some plants for trial in this country. The climate on these hills is much the same as that of England.

In northern Italy they sometimes serve a fruit, which, though I cannot recommend it, is very pretty. I have seen it growing wild between Turin and the Sapera, and it would be highly ornamental in our greenhouses or for table decoration. The name of the plant, as I understood it, is Cicinga (pronounced *Chichinga*). When ripe both the fruit and its pod, or envelope, are of a brilliant scarlet tipped with orange. In other places I have seen another variety which is of a pale green, turning to a dusty brown when ripe. I have no doubt it would grow easily in a hothouse, or, perhaps, on a sunny border.

Again: in going down the southern slope of the Col de Tenda I found plants of a species of *Salvia* with the terminal leaves on the branches of a brilliant violet colour. Can you tell me what is its name, and if it can be procured in England?—D. S.

[The Rose, we think, is *Rosa alpina*. The Cicinga is *Physalis alkekengi*, one of the Winter Cherries. If any of our readers recognise the *Salvia* they will oblige us by sending the specific name.]

TRANSATLANTIC JOTTINGS.

AMERICAN VINES, AND PRUNUS MARITIMA AS STOCKS.

My impression is that stratified and expensive borders, defective root action, and shanking Grapes, could all be dispensed with if a few of your progressive Grape-growers could be induced to test some of our American varieties as stocks upon which to work the varieties of *Vitis vinifera*. I do not refer to grafting varieties of *Vitis vinifera* upon varieties of *astivalis* and *labrusca*, but to inarching green wood upon green wood at such a point as to prevent the possibility of the inarched variety rooting, and thereby rendering it entirely dependant upon the stock. Grafting the Vine is under all circumstances an uncertain operation, and the scion sooner or later emits roots, defeating the intention of the operator.

As stocks for varieties of *Vitis vinifera*, the varieties of *labrusca* and *astivalis* present many advantages. They are the most vigorous growers in existence, and are uninjured by heat or cold, or atmospheric changes; some ripen late and some early. It matters but little whether the roots are growing in dry or wet soil, light or heavy, drained or undrained. They are to be found flourishing under almost all circumstances in every section of the Union; battling with trees and undergrowth for root-room, and their tops clambering over the highest trees of the forest. Some varieties flourish best in swamps, their roots revelling in sour clay and water; others on hill sides, seeking nourishment among stones and gravel, where varieties of *vinifera* would starve. Those varieties that have their habitat in swamps, if removed to dry and sandy positions, grow as luxuriantly as though they were revelling in the swamp. All that is required to make varieties of *labrusca* and *astivalis* flourish, and insure healthy root action, is to give the roots work, plenty of top work, as an outlet for their vitality. Give the tops work, and the roots will extend and flourish in a wet or dry soil, in sunshine or shade, in stratified or unstratified borders where varieties of *vinifera* would languish and die. Without pruning, the varieties of *vinifera*, owing to their weak vitality, soon succumb, even if planted in good soil; on the contrary, American varieties will seek nourishment in thick undergrowth, and clamber from tree to tree, covering the tops of the highest in the forest. It is common to find them measuring from 12 to 18 inches in circumference at the surface of the ground in many portions of the Union. In one instance we measured a wild Vine 36 inches in circumference at 1 foot from the ground.

I am inclined to refer the vigour of some of the American Grapes to the formation of their roots. Those that are unaffected by mildew, and that grow luxuriantly, possess numerous small wiry roots covered with fibres. In varieties of *vinifera* the roots are large, few in number, spongy, and with but few fibres. A few days since I was much interested in an examination of over four hundred seedling Vines which I removed from their seed bed. About one-half were hybrids, and they presented a few large spongy roots, with but few fibres; on the contrary, the seedling natives of pure race possessed numerous, small, firm roots with a number of fibres. A number of our new American Grapes are liable to mildew, and upon examination I find that the roots of such are large, spongy, and with but few fibres. My impression is that the

roots of our hardy vigorous varieties have much to do with their growth, and their ability to succeed in adverse soils and situations.

If American varieties were used as stocks, but little preparation of the soil for borders would be required, and for ground vineries they would answer admirably, for they would grow luxuriantly in any common garden soil. For pot culture they would be a success, for they would flourish in a small space. I have inarched a large number of the varieties of *vinifera* upon varieties of *astivalis* with the intention of thoroughly testing their value as stocks, and, if acceptable, shall report progress in the future. Inarching the Grape has under all circumstances proved a simple and successful operation in my hands, and if I thought it would interest your readers, I would describe the process in detail.

I cannot resist the temptation of directing the attention of your readers to the advantages to be derived from using the *Prunus maritima* as a stock for Peaches, Plums, and Apricots.

Those possessing a light sandy soil experience great difficulty in cultivating the Plum, and I see no reason why their efforts should not be successful. All that is necessary is for your nurserymen to test the *Prunus maritima* as a stock. Portions of our sea-coast consist of banks of almost pure sand deposited by the waves and winds. Upon these drifts, within reach of the ocean spray, flourish the varieties of *Prunus maritima*, a dwarf-growing species, varying from 3 to 5 feet high. This year I raised a number of seedlings upon a rather heavy loam, and they made a most vigorous growth, proving that it will flourish in other soils besides sand. Although small, the fruit is excellent, and produced in immense quantities. It seems to me that this species would make an admirable stock for Peaches, Plums, and Apricots for orchard-house culture and for small gardens, more especially where the soil is so sandy as to interfere with the growth of the usual Plum stock.—ALFRESCO, Lodi, N.J., U.S. of America.

CUTTINGS OF PELARGONIUMS.

I AM pleased to have an opportunity of replying to Mr. Perkins's doubts in regard to my method of propagating the Pelargonium. I held for years the same opinion that Mr. Perkins holds, and it was only after seeing the success that attended the efforts of a first-class propagator in a large London nursery, that I felt so thoroughly convinced that the close plan was so advantageous. At first I was careful to only adopt it in a modified form, but I soon saw the full force of keeping the cuttings close, and I only advise Mr. Perkins to give the system a fair trial, when, I think, he will bear out the greater part of what I have stated.

In regard to the number of cuttings I lose per thousand, I may say that the loss is very small indeed in most cases. Of Lady Plymouth, although it is generally considered to be difficult to root, I find on the close system I do not lose twenty cuttings, and it strikes as soon as Tom Thumb or any of the strong growers, of which I may also state that I do not lose a larger per-centage. The varieties most liable to damp-off with me are the Silver-variegated Zonals, if not looked carefully after, in about a week or ten days after the cuttings are put in, on account of the lower leaves decaying. The varieties of the Golden section all do remarkably well, the loss being small, not exceeding from twenty to thirty per thousand.

I would observe, that immediately after you find the cuttings rooted commence giving air, or damping-off will soon take place.

Mr. Perkins says that my mode of treatment may do very well where the coal heap can be run to. Here I differ from him; for I have found by experience that, although the cuttings are put in later, they strike so much faster, that before the winter sets in there is ample time to harden them off, so as to enable them to withstand the dull and trying weather we are experiencing at the present time.

I beg to thank Mr. Perkins for commenting on my method, and trust that he and numbers of the readers of the Journal may see their way clearly to the adopting of my plan.—JAMES STEWART, Nancham Park.

TEA CULTURE IN INDIA.—To those interested in the cultivation of Tea in India the following information may prove satisfactory:—In a letter just received from one of my sons in Assam, he states that in his garden the plough is being used

with the best results; it is drawn by bullocks, and he says the work done is quite as good as by the hoe, and the expense trifling. I have four sons in Assam, three of whom are Tea planters. I am a great believer in the cultivation of Tea in India.—OBSERVER.

SHRUBS FOR GAME COVERTS.

REFERRING to the inquiries relative to Game coverts and injury to plants, I can state from twenty-five years' experience, and with game of all sorts up to my doors, that hares and rabbits will destroy any sort of trees or shrubs when young, except the Rhododendron, Box, Privet, and Bramble; that I can now rear a young plantation on any part of my property only by surrounding it with wire netting, and cannot enclose a field except with timber or wire fencing; and that I have frequently known Ash trees as thick as a man's thigh totally ruined in spring by the hares and rabbits, though a corn field was in braid close to the covert, they appearing not to feed upon the bark, but to do the mischief merely for amusement's sake.

The plants mentioned I have had well tested, and never saw them injured; and no shrubs form a better or more beautiful covert, or grow more freely on fairly good, rather dry, loamy soil.

The Bramble will grow under trees, close along the ground, or as high as a man's knee, retaining its leaves all winter; the Rhododendron will grow close to the ground, affording an excellent low cover, and seldom rising above 8 feet, flowering beautifully every summer; the Privet will shoot up to 10 feet, keep its green leaves far into spring, and flower very sweetly in summer; whilst the Box will grow 25 feet high, is very beautiful, and the wood of great value.

If a friend were to ask me how to make a game covert in his park, I would recommend him either of the following two methods:—

1st, Plough all parts possible in September or October: sow and barrow-in early in spring plenty of Bramble seed, Barley, or Beans (the two latter for winged game in autumn); plant on the same ground Silver and Scotch Fir, Oak, Hazel, and Privet, in equal portions, 4 feet apart; surround the whole for six years with wire netting, and thin-out liberally every three years.

2nd, Plant and sow as above mentioned, with the exception of the Bramble; and plant early in spring on the same ground Box, Rhododendron, and Privet, but no trees or rabbit net required.

Of course all must be well fenced from cattle, and rides may be left, or cut out afterwards. The plants should not be much dug about, as their roots are tender; but the grass in July should be torn up round them to prevent smothering.

Any one who has in his park five or six such coverts, of about five acres each, is much to be envied, and he will find it pay much better than deer.—W. G.

GRAFTING AND INARCHING VINES.

I CAN fully confirm what Mr. Douglas says (page 25), about the inutility of inarching the Red Frontignan on the Black Hamburgh. A branch in my viney so treated shrank this year even more than the parent plant.

As to the Chasselas Musqué, I fear that no stock will prevent its cracking, for this cracking seems to arise from the texture of the flesh and skin, which are impatient of moisture during the final swelling-off, particularly if the temperature be low. The same takes place in Green Gages against a wall when a wet and cold August succeeds a dry July. The Chasselas Musqué is so unequalled in point of flavour, unless, perhaps, by an unusually well-ripened Muscat of Alexandria, that one is loth to dismiss it from one's collection. It has been recommended to thin the Grapes severely; but as the effect of thinning is to increase the size of the berries, and as the largest berries are always the first to split, I should rather recommend that this variety be thinned less than others. If the roots were so confined that they could not obtain any water except at the will of the cultivator, if moisture were liberally supplied during the growing season, and withheld during the ripening period, with sufficient air and warmth I think few berries, if any, would crack.

I wish I could hit upon any plan which would, with any

probability of success, prevent the shanking of Frontignans. Is it true that they never shank against an open wall?—G. S.

POTATO PRODUCE—INFLUENCE OF THE SETS.

THE following are the results obtained by Mr. May, of Benthall, near Broseley, from experiments made in the year 1865 on 129 trial plots. He endeavoured to ascertain—

Firstly, The influence of the size of the set on the economic results of the crop—*i.e.*, whether any increase, and to what extent, is obtained over and above the extra weight of the set, in the planting of large, in lieu of small, sets.

Secondly, The influence on the crop of the distance at which the sets are planted; or the results of close and wide planting of various sized Potatoes.

Thirdly, The comparative results from planting similar weights of large and of small Potatoes per acre.

Fourthly, The relative advantages of cut and whole sets.

Fifthly, The influence of thick and thin planting, and of the size of the set on the proportion borne between the weights of the sets and the weight of the crop, and the rate of increase under various conditions.

Sixthly, The relative productiveness of different varieties of Potato.

Much diversity of opinion seems to prevail in these points, which are of economical importance in relation to both the farm and garden cultivation of the crop.

The selection of the Potato sets appears commonly to be more a matter of present expediency than prospective profit. The general course is to appropriate the largest for use, the very smallest for pig-feeding, the tubers of intermediate size being preserved for replanting; this method of assortment results in the use of sets of from 2 to 3 ozs. in weight, and a set of less than 2 ozs. is as often planted as one exceeding 3 or 4 ozs.

Our primary question is, whether an increase in the size of the set will produce an excess above the extra weight of the sets planted; such extra weight going to increase the strength of the individual sets without increasing their number.

The unequivocal results in favour of large sets, obtained from my experiments carried out in 1864, as well as from those which form the subject of this report, induce me to describe carefully the conditions under which the experiments were conducted.

Every precaution was taken to ensure the most perfect uniformity in the conditions under which the various experiments were made. The manure was separately weighed out, and distributed on each 20 superficial feet of ground. The distance (2 feet) between the rows was the same throughout the trial ground; and to counteract the influence of any slight variations in the character of the soil, the particular experiments that would be brought into immediate comparison were placed as nearly as possible in juxtaposition. External rows were rejected for the experiments, and planted with part of the ordinary crop; and every individual set was separately weighed and selected to the specified size, and planted to measure, at precise distances.

The gross average return per acre of numerous varieties was from—

	Tons.	cwts.	qrs.	lbs.
1 oz. sets	10	13	3	17
2 oz. sets	12	15	2	15
4 oz. sets	13	9	0	2
6 oz. sets	16	13	1	16
8 oz. sets	18	11	0	16

The following are the amounts of nett profit per acre for each ounce in the increase in the weight of the sets from 1 oz. up to 8 ozs. (each ounce in the weight of the set occupying 2 square feet, being equivalent to 12 cwt. 17½ lbs. per acre) of seed:—

	Tons.	cwts.	qrs.	lbs.
From 1 to 2 oz.	1	13	2	7½
" 2 to 4 oz. for each extra oz.	0	18	3	14
" 4 to 6 oz.	1	12	0	21
" 6 to 8 oz.	0	18	3	14

The average of a number of experiments with different varieties planted 9 inches apart in rows gave very similar results, as follows:—

GROSS RETURNS PER ACRE.				
	Tons.	cwts.	qrs.	lbs.
1 oz. sets	10	12	0	23 or 14.21 per set.
2 oz. sets	15	2	2	11 or 18.45 "
4 oz. sets	17	17	3	12 or 21.99 "

After deducting the weight of the sets, the nett balances of produce per acre stand thus:—

	Tons.	cwts.	qrs.	lbs.	ozs.
1 oz. sets.....	9	16	0	0	or 13.21 per set.
2 oz. sets.....	13	10	0	21	or 16.45 "
4 oz. sets.....	14	13	0	4	or 17.99 "

The average produce of a number of varieties planted at intervals of 6 inches in the row also exhibited similar advantages in favour of the larger sets, viz.:—

	Tons.	cwts.	qrs.	lbs.	ozs.
1 oz. sets.....	13	4	1	20	or 10.85 per set.
2 oz. sets.....	15	19	0	12	or 13.15 "
4 oz. sets.....	22	0	2	3	or 18.11 "

After deducting the weight of the sets, the nett balances of produce per acre stand thus:—

	Tons.	cwts.	qrs.	lbs.	ozs.
1 oz. sets.....	12	0	0	13½	or 9.45 per set.
2 oz. sets.....	13	10	1	27	or 11.15 "
4 oz. sets.....	17	3	1	5	or 14.11 "

Every step in each of these three series of experiments gives, without an exception, unequivocal evidence that each increase in the weight of the set produces more than a corresponding increase in the weight of the crop. The following statement will, however, show that the advantage in the employment of large sets is much less striking in the early than in the late varieties; out of the examples before given, the average produce of the early varieties, planted 1 foot apart in the row, exhibit the following result:—

	Gross Crop.					Nett.				
	Tons.	cwts.	qrs.	lbs.	ozs.	Tons.	cwts.	qrs.	lbs.	ozs.
1 oz. sets.....	9	3	3	26	....	8	11	3	8½	....
2 oz. sets.....	10	14	2	17	....	9	10	1	10½	....
4 oz. sets.....	13	19	0	7½	....	11	16	1	22½	....
6 oz. sets.....	15	6	0	22	....	11	13	1	2½	....
8 oz. sets.....	7	17	0	21	....	2	19	5	23	....

Although there is throughout an increase over and above the extra weight of the sets, the advance between the larger sizes is not very marked, and is much below that wherein the early and late sets are averaged together. There is even a falling-off in the produce of the 8 oz. sets, in comparison with those weighing 6 ozs.; but this is partly from accidental circumstances, the 8 oz. sets being much sprouted before planting; indeed all the larger sets of the early varieties were much more advanced than those of smaller size. After separating the early sorts from the general average results of early and late, the average produce of the late varieties, taken separately, will stand as follows:—

	Gross Crop.					Nett.				
	Tons.	cwts.	qrs.	lbs.	ozs.	Tons.	cwts.	qrs.	lbs.	ozs.
1 oz. sets.....	12	0	0	15	....	11	7	3	26	....
2 oz. sets.....	15	3	1	19	....	13	19	0	13	....
4 oz. sets.....	17	16	0	24	....	15	7	2	11	....
6 oz. sets.....	30	6	2	11	....	26	13	2	19	....
8 oz. sets.....	31	3	3	24	....	26	6	2	26	....

To establish the influence on the crop of the distance at which the sets are planted, I shall compare, separately, each series of experiments on Potatoes of the same weight, planted at different distances:—

AVERAGES OF 1 OZ. SETS.										
Varieties.	Distance apart.	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.	ozs.
13	1 foot.....	10	9	3	17	..	9	17	3	0
11	9 in.....	10	12	0	23	..	9	16	0	0
11	6 in.....	13	4	1	20	..	12	0	0	13

AVERAGES OF 2 OZ. SETS.										
	Distance apart.	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.	ozs.
13	1 foot.....	12	15	2	4	..	11	11	1	7
12	9 in.....	15	15	2	11	..	13	10	0	21
10	6 in.....	15	19	0	12	..	13	10	1	27

AVERAGES OF 4 OZ. SETS.										
	Distance apart.	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.	ozs.
12	1 foot.....	15	17	2	15½	..	13	9	0	2½
6	9 in.....	17	17	3	12	..	14	13	0	4
3	6 in.....	22	0	2	3	..	17	3	1	5

AVERAGES OF 4 OZ. SETS (SIMILAR VARIETIES).										
	Distance apart.	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.	ozs.
3	1 foot.....	15	8	3	24	..	13	0	1	11
3	9 in.....	15	19	2	14	..	12	14	3	6
3	6 in.....	22	0	2	3	..	17	3	1	5

These comparisons all show an advantage in planting the smaller sets at intervals closer than 12 inches in the rows; but the results are not very decided, and in one or two cases the gain in the gross crop does not make up for the extra weight of the sets planted.

The following comparisons refer to the effect of planting the sets more than a foot apart in the rows:—

Three experiments averaged together—viz., Eight-ounce Flukes, six-ounce Flukes, and four-ounce Late Red, gave a gross crop of 23 tons 16 cwts. 1 qr. 8 lbs., and a nett average of

20 tons 3 cwts. 1 qr. 17 lbs. The same sizes and varieties, planted at intervals in the rows of 1 foot 3 inches, produced a gross crop of 18 tons 13 cwts. 1 qr. 2 lbs., and a nett crop of 15 tons 14 cwts. 3 qrs. 20 lbs.—a falling-off of 4 tons 8 cwts. 1 qr. 25 lbs. per acre. Indeed, the produce of each set was as nearly as possible the same, whether planted a foot apart or 15 inches, so that the additional distance was so much lost to the crop. The average produce of six-ounce and eight-ounce Flukes shows a similar falling-off when planted more than a foot apart in the rows. The nett average produce per acre was:—

	Tons.	cwts.	qrs.	lbs.
Flukes, at 1 foot.....	17	10	1	25
" at 1 foot 3 in.....	15	8	2	6½
" at 1 foot 6 in.....	12	16	0	5

This diminution of the crop, through reducing the number of the sets per acre, is remarkably uniform, and as nearly as possible proportionate to the distance at which the sets are planted.

The general tenor of these experiments points to an interval of 10 or 12 inches in the rows as being the most profitable distance at which to plant large, full-sized Potatoes, of from 4 to 8 ozs. in weight. A moderate increase in the nett crop may be expected from still further diminishing the distance when the sets are below 4 ozs. in weight.

The general bearing of the results obtained is:—

Firstly, Every increase in the size of the set, from 1 oz. up to 8 ozs. in weight, produces an increase in the crop much greater than the additional weight of the set planted. The nett profit, over and above the extra weight of the sets, in planting four-ounce sets in lieu of one-ounce sets, amounted, on the whole series of experiments, to between 3 and 4 tons per acre; and the further profit, on the increase of the size of the set from 4 ozs. to 8 ozs., averaged about 5 tons an acre; all the intermediate steps partaking proportionately of the increase.

Secondly, The advantages in favour of the large sets is more marked in the late than in the early varieties.

Thirdly, In the use of small sets, of from 1 oz. to 3 ozs. in weight, a larger balance over and above the weight of the sets was obtained by planting from 6 to 9 inches apart in the rows than at wider intervals.

Fourthly, Increasing the intervals at which sets are planted, even of the largest size, in the rows, to more than 12 inches, diminishes the crop; and the wider intervals induce no increase in the weight of the produce of the individual sets.

Fifthly, It may be broadly stated that the weight of the crop is proportionate to the weight per acre of the sets, and that small sets will produce the same crop as an equal weight per acre of large sets. The fact is, however, of limited application, as a weight of very small sets equal to a weight of full-sized Potatoes could not be got into the ground, except by planting them so closely as to be prejudicial to the crop. The advantage, therefore, of large sets remains practically unimpaired.

Sixthly, Weight for weight, cut sets produce, as nearly as possible, the same weight per acre as whole Potatoes; but for the reasons given above, the weight of the sets should not be reduced by subdivision.

Seventhly, Smaller sets give a larger produce, in proportion to their weight, than the larger sets.

Eighthly, When the intervals between the sets in the rows are diminished to less than a foot, the produce of each individual set is proportionately diminished. Though this is not necessarily accompanied by a diminution of the weight of the crop, no increase in the produce of each individual set is caused by placing the sets at intervals wider than a foot.

Ninthly, With reference to the relative produce of different varieties, a late red sort takes the precedence throughout the experiments; and of the several varieties of Fluke, Spencer's King of Flukes and The Queen of Flukes are much more prolific than the ordinary variety.—(*Journal of Royal Agricultural Society.*)

FRUIT-GROWING IN THE FAR NORTH.

As we are now in the midst of our planting season, with the time for propagating or grafting fast approaching, it may be interesting to your readers to learn what sorts of fruits succeed so far north as the shores of the Moray Firth, in Scotland.

Although our climate is so dry and sunny as to make Wheat our staple crop, yet varieties of fruits that succeed here must be endowed with a certain degree of hardiness. We have had a rather extensive collection here for the last thirty years, and

profiting by our experience, some of your readers may avoid the disappointment attending experiments in growing new fruits. Those that succeed best here may reasonably be expected to do well further south.

A great hindrance to the growth of good fruit in Scotland and in the north of England, is the uncertainty and disappointment occasioned by planting varieties unsuited to the climate.

As Pears and Plums are the two sorts of fruit that have of late received the most important additions of improved varieties, I shall for the present confine myself to these.

The first-rate Pears that succeed on the wall here are—Jargonelle, ripe in August and September; Sinclair, in October; Marie Louise, Thompson's, Beurré Superfin, Beurré Hardy, Van Mons Léon Leclerc, and Brown Beurré, in November; Winter Nelis and Hacon's Incomparable, in December and January; Easter Beurré, in February and March; Beurré de Rance, in March and April; Fortunée, in April. Citron des Carmes, ripening in July, a good second-class Pear, is a desirable addition to the foregoing.

The following are first-class as standards—viz.,—Beurré d'Amanlis Panaché and Sinclair, ripe in October; Beurré Superfin and Aston Town, in November; Zéphirin Grégoire and Beurré d'Arenberg, in December and January; Monarch and Beurré de Rance, from February to April. These have not yet borne abundantly.

Good and useful second-class Pears as standards are—Summer Doyenné, ripe in August; Beurré Giffard, in September; Williams' Bon Chrétien, in October; Muirfowl's Egg, in November; Achan, in December; Forelle, in January; and Léon Leclerc de Laval, an excellent baking Pear, from November to May.

Some of the varieties that do not succeed well here are—Passe Colmar and Beurré Bosc, hardly first-rate; Louise Bonne, Urbaniste, Fondante d'Automne, Glou Morceau, Dunmore, Joséphine de Malines, and Bergamotte d'Esperen, all second-rate; Flemish Beauty and Duchesse d'Angoulême, third-rate; Chaumontel, Beurré de Capiaumont, and Suffolk Thorn, fourth-rate. Some newer famed varieties have not yet fruited.

Of Plums—July Green Gage, Jefferson, Bryanston Gage, and Reine Claude de Bavay, are first-rate wall fruits. Coe's Golden Drop is the best, but drops the greater portion of its fruit when quite small.

Belgian Purple, Denniston's Superb, and Lawson's Golden Gage are abundant-bearing, first-rate standard Plums.—JOHN McCULLOCH, *Gardener, Duffus, near Elgin.*

WOOLLAND HOUSE, DORSET.

THE SEAT OF MONTAGU WILLIAMS, ESQ.

TO-DAY, January 6th, I visited my friend and neighbour, the frost being hard, and the ground lightly covered with snow—not a very favourable time for a review.

The house is a fine mansion, commanding a magnificent northern view of the grassy vale of Blackmoor for many miles. It is situated under the same range of hills as my own house. The views from the hills behind our houses is, perhaps, one of the finest in England. I have never seen anything to equal them, except the Weald of Kent, from the windows of Horsmonden rectory, the property of the Rev. Hugh Marriott.

On the west side of the house is a new church built by Mr. Williams, capable of holding the few parishioners and the household. It is quite a model of its kind. In front of the house is a lake stocked with carp, tench, and other fish. I was asked to look over the gardens. Of course, with snow on the ground, it was not a very propitious time; but I saw one or two matters of public interest, which are the main object of this article.

I saw a galvanised wire trellis for Peaches, Nectarines, and other wall fruit. I think in process of time of copying this. Mr. Williams told me that it answered admirably. It is well put up, the wires being 6 inches apart, and strained so as to fit closely to the walls. There is no need of nails or nail holes, the habitats of woodlice, earwigs, and other pests.

The other subject of interest were specimens of Hullett's Chinese Sugar Grass, hung up in theinery. I refer to this (see page 14), in compliance with the wishes of "H. C. S. G." Mr. Williams pointed them out to me, and said, "These are the famous Sugar Grasses you have lately heard so much about. I had ten seeds, which cost me 2s. Of these, three did not come up, seven came up, two were cut off by the frosts, two grew 5 feet high, and three grew 10 feet high. The seeds, which

amounted to about five hundred per stalk, did not ripen, as I planted them two months after the prescribed time." This is all he could tell me about it.—W. F. RADCLIFFE.

[Unless the Chinese Sugar Grass is sown in a hotbed, and the seedlings planted out, no seed is ripened by the plants in this country, nor even then except in favourable localities.—EDS.]

HABITATS OF THE MISTLETOE.

I HAVE a plant of it here from seed sown on an Apple tree, and now it is a bush about 9 feet in diameter. There are a few more in Ireland, but none growing naturally.

In France, the orchards one passes on the way from Calais to Amiens are loaded with Mistletoe. In the south of France it abounds on the trees about Pau, chiefly on Poplars. I have not seen it on the Oak; but in the Pyrenees near Gabas I have observed the Silver Fir loaded with it. It is also stated that it grows most abundantly on *Pinus sylvestris* in the forests of Germany, about Magdeburg. Query, Does it really live on the sap of the tree, or only attach itself as a barnacle does to the rock? The Apple tree on which mine hangs seems evidently exhausted, as if by supplying its food; but, then, is it not extraordinary that the same plant should live upon the sweet sap of the Apple and Poplar, and on the resin of the Pine tribe? The analysis of the Mistletoe (French *Gai*), from such different species of trees would be curious.—C. W. H., *Hamwood.*

KITCHEN GARDEN WALLS.

(Continued from page 10.)

GARDEN walls are usually 9 inches, 14 inches, and 18 inches in thickness. The thickness of a wall should be in proportion to its height. A wall between 6 and 8 feet in height will, providing the workmanship is good, prove secure if one brick or 9 inches in thickness; but if the height exceed 8 feet, piers will be needed. A 9 inch brick wall 9 or 10 feet in height should have piers 22½ inches, or two stretchers and one header, in breadth, and the piers should be 12 feet apart. They should proceed from the foundation and be carried up to within 2 feet of the top of the wall or coping. They ought not to project more than half a brick, or 4½ inches, from the wall. It is well to have a coping on the tops of the piers. A 9-inch wall supported by piers is unsightly, the trees are difficult to train upon it, and they succeed better upon walls unshaded by piers. In constructing the wall the piers may, indeed ought to be built on the less important side, so that the more desirable aspect may present a plane surface for the training of the trees.

A wall 14 inches in thickness is very substantial, and may be carried up to a height of 12 feet without the support of piers. Walls 14 inches thick are unobjectionable, and are as strong as will be necessary in most instances; but in particular cases, as in bleak and exposed situations, where walls are required of a greater height than 12 feet above the ground level, a wall 18 inches in thickness will be much more secure. The thicknesses I would recommend, are for walls not exceeding 8 feet in height, 9 inches; 9 feet and not exceeding 12 feet, 14 inches; and 12 feet and not exceeding 18 feet, 18 inches; and in all cases I would do without brick piers, which are unsightly.

A wall 14 inches thick built hollow will be found quite as substantial as a 14-inch solid wall, whilst an 18-inch hollow wall is stronger than a 14-inch solid wall. Hollow walls are drier and warmer than those which are solid, and being fully as durable ought to supersede these entirely, more particularly those built 9 inches thick, with piers.

All walls, more particularly garden walls, ought to have good foundations; in all cases these should be the depth of the borders, so that in trenching these the foundations may not be undermined, or the soil loosened. If the bottom of the trench is firm it will not require to be concreted, but if soft it may be necessary to concrete it, if not its full length, at least in some places where the ground is soft. In such places the trench should be of a greater depth than where the bottom is firm, and be filled to the level of the firm bottom with concrete, which may consist of coarse gravel run with mortar. Ram this quite firm, and then put on a layer of fine gravel. The bottom ought to be made quite level, and if the ground slope proceed by horizontal steps, short or long, according to the incline of the ground. The bottom of the trench should exceed in width the thickness of the wall, for the base of this must be twice the thickness of the wall, or have two "sets-on,"

on each side. A 9-inch wall will need an 18-inch base, a 14-inch wall one of 22½ inches, and an 18-inch wall a base of 27 inches. When the ground is very firm, one-half of the above breadths of base will do; but in places where stone is procurable the base may be of that material, commencing with the width of base required for the wall, and battering both sides of the wall upwards, so that at the ground level the thickness will be that of the wall to be built. This is a great saving of bricks, and affords a foundation quite as substantial as these, if not more so. Stone, however, cannot always be had, or its costliness is an objection to its use.

Figs. 1, 2, and 3 are sections showing different modes of forming the foundations of garden walls.

It will not be necessary to give further sections, as it will be evident from those given, that the foundation or base should project 4½ inches beyond both faces of the wall whatever its thickness may be. In some cases, as where the ground is soft, a wider base may be desirable; then the base may be twice the thickness of the wall, diminishing the width by equal steps on both sides, each step or "set-on" not exceeding 2½ inches.

Sometimes stone is plentiful, but not of a description suitable for forming a good face or convenient courses for training. To economise bricks, I have seen walls with stone bases to the ground line, and the less important side of the wall built of stone, the other being cased with 4½-inch brickwork, and they were very substantial. The bricks (headers), should be well bonded with the stone, and the stone with the bricks.

Stone walls are necessarily of greater thickness than those of brick, and it is customary to incline them upwards on both sides so as to be wider at the base than the top; for instance,

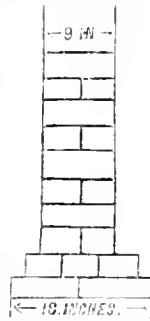


Fig. 1.—Section of a 9-inch Wall without Piers.

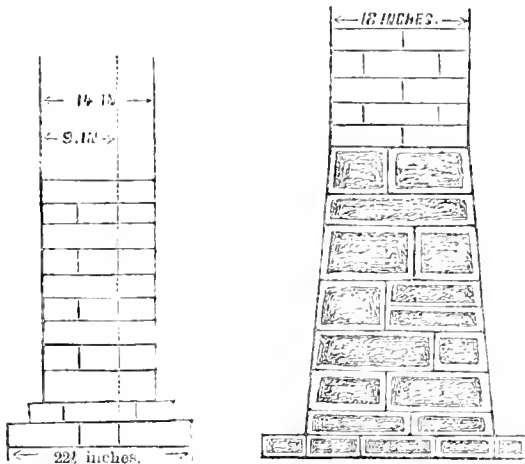


Fig. 2.—Section of a 9-inch Wall through Pier, the dotted upright line showing the line of 9-inch wall.

Fig. 3.—Section of 18-inch Wall, with a stone base from foundation to the ground line.

a wall 6 feet 6 inches high is made 20 inches thick at the bottom, and reduced to 15 inches thick at the top; one 10 feet high is made 24 inches thick at the bottom, and reduced to 16 inches at top. A stone wall from 12 to 15 feet in height needs a base of 28 inches.

I have not noticed banded and other descriptions of bricks by which it is said that the necessity for nailing is obviated. My experience of them is very limited, and I am not prepared to give an opinion, only I do not like their projecting and affording an uneven instead of a plane surface. The process of tying, also, is more tedious than that of nailing.

I may here likewise state, that there is no objection to a stone wall, however uneven the courses, provided it be covered with a trellis of No. 10 galvanised iron wire. The wires should be fixed horizontally, from 3 to 4½ inches apart, being passed through holdfasts entering the wall about 2 inches, and projecting from three-quarters of an inch to an inch, so that the wires may be about half an inch from the wall. There must be an iron plate at each end of the wall, through small projecting

eyes in which the wires can be run and fastened, straining them at one or both ends according to the length of the wall. The plates, therefore, ought to be made secure to the wall, and to maintain the wires equidistant the holdfasts should be put in 3 feet apart, or as near that distance as the joints in the wall will permit. The appearance is good, the trees thrive well against the trellis, the wall is not damaged by nailing, and the wires are very durable. I know some iron trellises which have been fixed nearly half a century, and are still almost as good as ever. Wood trellises are heavy, quite as expensive as iron, and not half so durable. I have taken them away quite useless not twenty years after they had been erected.

In constructing garden walls, good brick, or good durable stones of a suitable thickness, are essential, and not less important is good mortar in which to set or lay them. The quality and quantity of lime has a great influence on the firmness of the work. Good lime, such as plasterers use for "running" to make "putty," is unquestionably the best for all descriptions of brickwork, whilst for stone walls a hotter description of lime will make better work. As to sand, it should be sharp, in order to become hard when blended with the lime, but for garden walls it may be too sharp; hence river sand is not good, nor pit sand approaching to gravel, but rather sharp pit sand of a loamy nature. Two tons of sand and one ton of lime make very good mortar, setting sufficiently hard for garden walls. Cement, or the addition of any hard-setting material should be avoided, as it is almost impossible to drive nails into it.

Not only should good materials be employed, but these must be properly disposed in building. The work ought not only to have an even or plane surface, be plumb, but the bricks should be well bonded. There is no question that the Flemish bond is



Fig. 4.—9-inch Wall, Flemish bond. 1st course.

preferable to English bond. In Flemish bond the headers, *a*, are laid alternately with the stretchers, *b*, in the 1st course (fig. 4), and in the 2nd course (fig. 5), where *c* is a stretcher and *d* a



Fig. 5.—9-inch Wall, Flemish bond. 2nd course.

header; whilst in English bond (figs. 6 and 7), the courses are alternately one of headers and another of stretchers throughout, as *e* stretchers, *f* headers. Sometimes in English bond the



Fig. 6.—9-inch Wall, English bond. 1st course.

headers are put in alternate courses with the stretchers, but in general four courses of stretchers are laid to one of



Fig. 7.—9-inch Wall, English bond. 2nd course.

headers, but the work is not so good as when the courses are alternately headers and stretchers.

To make good work of a 9-inch wall, the bricks must be of uniform size—usually 9 inches long by 4½ inches in breadth,

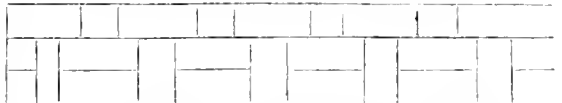


Fig. 8.—11-inch Wall, Flemish bond. 1st course.

and scarcely 3 inches in thickness. If the bricks are fully 4½ inches in breadth and scarcely 9 inches in length, no brick-layer can make good work with a 9-inch wall, as the stretcher course will prove too wide for the header course; hence the surface will be in and out, and the joints irregular and bad. In walls of greater thickness than 9 inches, the irregularity in

the dimensions of the bricks can to a certain extent be accommodated, but where good work is wanted the bricks cannot be too regular in size.

In constructing 14-inch walls in Flemish bond, on one side a half brick must be used for a header, whilst on the other side a whole brick is laid (see *fig. 8*). In the next course (*fig. 9*), the headers are reversed, so that they will lie on the course of headers on the other side, and the third course (*fig. 10*), is laid with whole headers in place of half headers. The headers are



Fig. 9.—14-inch Wall, Flemish bond. 2nd course.

made to cross the internal as well as external stretchers, and there will be a thorough bonding of the work, but it is at the expense of putting two courses on the same side of the wall

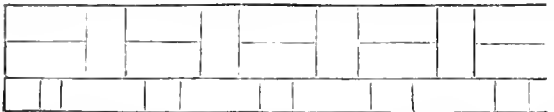


Fig. 10.—14-inch Wall, Flemish bond. 3rd course.

with half bricks for headers. The headers in the next course will cross the headers in the third course, and so on. If the headers are carried up perpendicularly, the wall will have a neater appearance than it would have if it were built in English

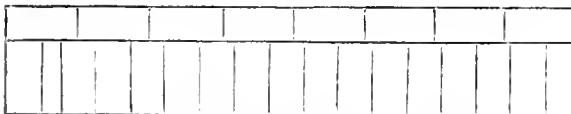


Fig. 11.—14-inch Wall, English bond. 1st course.

bond, examples of the courses of which are shown in *figs. 11* and *12*. In this mode of building the headers are laid in alternate courses, with first a row of headers and then a row of stretchers, there being a row of headers on one side, and a row of



Fig. 12.—14-inch Wall, English bond. 2nd course.

of stretchers in every course. This makes a very good bond; but in ordinary building it is not usual to lay a row of headers upon every course of stretchers, but to put four courses of stretchers and then a row of headers, which is not so tedious to build, but the work is not so good.

Hollow walls are built both in Flemish and English bond,



Fig. 13.—14-inch Hollow Wall. 1st course.

but the former is much preferable, hence it is the only kind of hollow wall which I shall describe. As in the case of a 14-inch solid wall, the headers and stretchers are laid alternately, the first header on one side being a whole brick, and all the others



Fig. 14.—14-inch Hollow Wall. 2nd course.

half bricks, except every fifth header, which is a whole brick. (See *figs. 13* and *14*.) On the other side of the wall the third header is a whole brick, and then every fifth afterwards, so that every third header is a full-length header, but on opposite sides of the wall; all the other headers are half bricks. The hollow part may begin at the ground line, the wall being built solid up to that, and then carried up hollow to within three or

four courses of the top, which should be built solid the same as the base, as shown in *fig. 15*.

It is desirable that the joints in all brickwork should be small; indeed, they cannot be worked too closely; that the horizontal joints should be on one level, which will be the case if the bricks are laid on an even bed of mortar; and that the perpendicular joints in Flemish bond should not only cross but be quite perpendicular, though separated from those above or below by stretchers.

Walls are best built in mild weather, for should the nights prove severe the mortar will, to a certain extent, fall out from the joints on a thaw taking place, whilst if built in very wet weather, heavy rains beating against the new brickwork cause the mortar to run, giving the wall an unsightly appearance. In building in dry weather the bricks absorb the water from the mortar too quickly, consequently good work is not then made, unless the bricks are well sprinkled with water.

Good pointing is essential to a good wall, and the bricks should be so bedded that it will not be necessary to force any mortar in, but simply to dress the joints off with the trowel. Fancy pointing is not required for garden walls, unless under peculiar circumstances, and where a wire trellis is to be fixed; for nailing soon spoils the appearance of a "dressed-off" wall.

Having now referred to most of the essentials for a garden wall, I will next notice copings. There is, perhaps, nothing equal to stone for copings, where it can be had at a moderate cost. I have seen three kinds of coping employed, the V, the flat, and the dished, each having its advocates, but I have no doubt as to the dished being the best. However, as tastes may differ, I give examples of the three.

Fig. 16, is a high V-coping 18 ins. in breadth, 6 inches in depth in the centre, and 1 inch at the edges. This is too high in the centre for garden walls, unless they are required to be ornamental.

Fig. 17, is a low V-coping 18 ins. in breadth, 4 inches in depth in the centre, and 1 inch at the edges. Both this and the preceding have a small groove or throating beneath on both sides, to prevent the drip running down the wall.

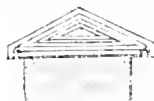


Fig. 16.



Fig. 17.

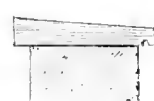


Fig. 18.

Fig. 18 represents a flat coping 18 inches in breadth, and 1 inches in depth on one side, and 3 inches on the other, so that water may run off. On the lower side there is a groove beneath the projection.

Fig. 19 is a dished coping, the stone being 4 inches thick, and dished-out in the centre 1 inch, having an incline from the centre inwards, and also longitudinally along the wall or coping, so that water will not only run from the sides to the centre but along the wall; the channel, beginning at level, will at 12 feet be 1 inch in depth, and it should incline both ways. At every 12 feet there should be a pipe to convey the water away, consequently there will be no drip.



Fig. 19.

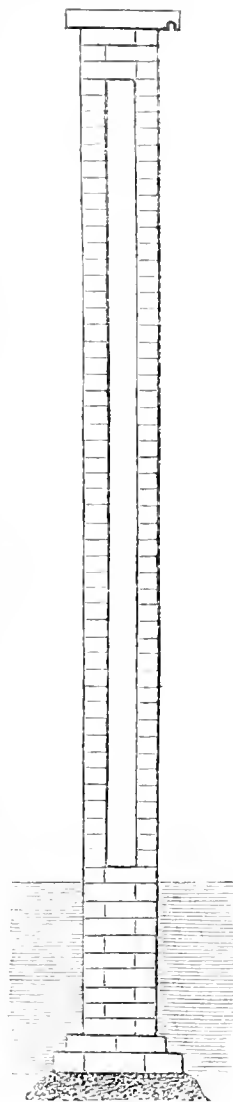


Fig. 15.

The copings represented are for 14-inch walls, having a two-inch projection on each side beyond the surface of the wall, which will be ample. Greater widths are unsightly, and prevent the trees receiving the benefit of rains and dews in summer.

Next to stone copings those of fire clay are good. They should be 3 inches thick, have a groove on one side, and be set so as to incline to the side on which the groove is situated, which should be the north side of a south-aspect wall, or the east of an east or west wall. The copings, of whatever kind they are, ought to be put on when the wall is built, so as to protect the latter from the weather, and the joints should be made good with cement, so that water cannot enter the wall by the joints of the coping.

For particulars as to the construction of flued walls, see Vol. X., New Series, pages 429, 430, and 431, where I have stated all I know about them.—G. ABBEY.

NOTES AND GLEANINGS.

It was only last week that one of our correspondents, in writing of *Dracanas*, entered into some particulars respecting the great DRAGON TREE (*Dracena draco*), at Oratava, in the island of Teneriffe. The news has just reached this country that its immense head, which has withstood the tempests of many hundreds of years, was levelled to the ground by a storm which occurred last autumn. The gentleman who reports this loss states that when he saw the tree in February last it was in excellent health, and its immense crown was covered with innumerable panicles of scarlet fruit, though the trunk was completely decayed in the interior. A solid wall had been built under a portion of the trunk where the ground is sloping, and some of the branches were propped, but, it would seem, very inefficiently; and it must be a subject of regret to the scientific world, and more particularly all interested in remarkable specimens of the vegetable kingdom, that measures better calculated to secure as long as possible the preservation of a tree so extraordinary by its age and dimensions, should not have been taken by the authorities of the island. According to the latest accounts its circumference was about 78 feet, and its total height about 3 feet less.

— The following circular, which has been promulgated at Aldershot, will prove of incalculable advantage to the troops in the division, as there is a large quantity of ground that can be easily cultivated, in addition to that already in the hands of the soldiers:—"SOLDIERS' GARDENS.—The Secretary of State has decided to allow the issue, at the public expense, of tools for the cultivation of garden ground allotted to the troops under War Office Circular dated 2d March, 1865. The tools will not be issued to individual soldiers permitted to cultivate gardens; but each company cultivating a garden will, on application to the barrackmaster, through the General or other officer commanding, be supplied with one set, consisting of one of each of the following articles:—Spade, digging fork, large and small rake, large and small hoe, trowel, dibble, line and reel, pickaxe, mattock, grubbing hoe, large and small waterpot, wheelbarrow. Barrackmasters will have in store one set of tools for each company the barracks where garden ground exists will contain.—EDWARD LUGARD."

— AMONG nurserymen the last of the old race of Scotch Dicksons has passed away in the person of Mr. JAMES H. DICKSON, of Chester, who expired on the 28th ult. at his house, Newton Villa, Chester, in the 72nd year of his age. Mr. Dickson and his cousin, the late Mr. Francis Dickson, established the Chester nurseries in the early part of this century, and through their enterprise their nurseries became among the most extensive in the kingdom. A few years ago the partners separated, and formed independent establishments, which are now conducted by their respective families.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, to keep up a succession fresh beds will require to be started every three weeks. A temperature at the roots of 65° is sufficient. When fresh beds are made, and there is danger of overheating, it is advisable to have some rows of drain pipes across the bed, by opening the ends of which the superabundant heat will escape. They will also be useful in diffusing the heat of a lining when necessary. *Cress*, sow this and *Mustard* once a week in a little heat; the soil can scarcely be too dry. For all these purposes much fermenting material

is necessary, but there is always a quantity of refuse from the flower garden as well as the kitchen garden, which, instead of being taken to the rubbish heap, would be made available in the frame ground. *Carrots*, a slight hotbed should be prepared for Horn Carrots and *Radishes*, to succeed the crops now coming into use. *Rhubarb* and *Sea-kale* will be most economically obtained at this period by taking them up and planting them thickly in a slight hotbed. Fresh plants will be required every season.

FRUIT GARDEN.

Gooseberries and Currants, if pruned, may now be washed over with a mixture of cow dung, clay, soot, and lime, brought with water to the consistency of thick paint. Plums and Cherries will be benefited by washing with a similar mixture, adding to it, if thought necessary, tobacco water and flowers of sulphur. Where the planting of fruit trees is not yet finished, it should be deferred a month or six weeks longer; meantime prepare the ground for their reception. It often occurs that in attempting to obtain a very early crop of Strawberries, the plants are subjected to too much heat and kept too close, and failure is the consequence. They should be kept cool at first, and have plenty of air daily, except during frost or cutting winds. They should on no account be subjected, as is often done, to the same treatment with regard to heat and air, as Vines and Peaches, till after the fruit is set, when they will do well on the viney or Peach-house shelves.

FLOWER GARDEN.

Where any of the beds require the soil to be renewed, frosty mornings offer the opportunity of doing the work cleanly and expeditiously. By far too little attention is paid to trenching and draining flower beds; it is surprising how much better tender plants support the summer drought in beds that have been trenched than in those which have been merely dug. Any of the annuals that have been injured by the late frosts had better be cleared away; and if the ground between the plants can be stirred-up on a dry day with a small hoe, it will do them good. Wallflowers, Sweet Williams, Hollyhocks, and any of the more hardy biennials, may be removed to the flower borders. Wallflowers, if for their fragrance only, should be planted abundantly in all gardens. Mice will often attack *Polyanthuses* at this time of the year, especially when in frames, and commit serious ravages by eating out the hearts, and it will require some vigilance on the part of the grower to prevent this. Snails and slugs are great pests both to *Auriculas* and *Polyanthuses*. A little fresh bran placed under a flat tile, raised at each corner by small pebbles, is found to be the best trap amongst the many recommended.

GREENHOUSE AND CONSERVATORY.

The grand point to attend to in the greenhouse is to keep the plants from growing till as late in the spring as possible; such plants as show a disposition to grow early should be removed to the coldest part of the house or to cold frames in mild weather—anything rather than an early spring growth, unless for some special purpose. As fires are seldom wanted for drying-up the house after this time, as little fire heat as possible should be used, and any covering at hand to throw over the glass in frosty weather will lessen the necessity for strong fires. Besides saving coals, this will be much better for the health of the plants. *Pelargoniums* and *Cinerarias* require more heat than the woody greenhouse plants, and are kept in houses by themselves in nurseries and large establishments; but where there is only one house for the whole, they may be kept in the warmest end. Orange trees that have been forced last spring, and kept in-doors all summer, will now begin to grow; and if they are in good condition they will flower freely on the young wood and little side spurs. In order to bring them into regular shapes, the strongest shoots ought to be stopped occasionally with the finger and thumb, not, however, until after the flowering is over. March is time enough to repot established plants of these; but young ones in small pots may be shifted now and turned into bottom heat in the forcing pit. No plant delights in bottom heat more than the Orange, and few plants which will live over the winter in a low temperature like it will stand more stove heat at all times when treated as a stove plant. Another peculiarity noticed in the Orange is, that it requires less earth to grow in to produce heavy crops of fruit than any other plant of the same size. Bad drainage and too large a pot will soon injure it. Avoid as much as possible letting into the conservatory strong currents of cold air at any time, even when going in or out by the door; but in mild weather you may give air for

several hours in the middle of the day. Water early in the day, and keep the plants constantly clean from dust and insects.

STOVE.

A few plants will now or soon begin to grow in large collections. Some time ago this used to be the first note of preparation for potting, but now few gardeners will pot or shift plants for the next six weeks. A good criterion for the time of spring-potting any plant is when the roots are observed to grow freely. It follows, therefore, that plants which are grown in bottom heat will require shifting much sooner than those on shelves. Pruning is more or less necessary for almost all plants, and the time for this work is regulated by that when the plant is expected to flower. The management will entirely depend upon the time the plant is wanted to flower; but he who flowers his plants nearest their natural time will, of course, have the most success. Little water should be given this month, and the house should be kept at a comparatively low temperature. Now that some of the Orchids are beginning to grow, great attention must be paid to the young and tender shoots, to see that no moisture lodges in their centres or inside the stems or bulbs.

FORCING PIT.

Roses of all sorts do better when first brought into a temperature of 55°, with a bottom heat of 75°, and not to pass 60° till all the eyes are fairly started. A dry atmosphere is best for very early forcing; we can always supply moisture as we think necessary. Recently built pits, and especially where tanks are used, are troublesome for this branch of gardening, owing to the amount of moisture they have in their atmosphere.

PITS AND FRAMES.

When the weather will not permit the lights to be taken off, you can improve and sweeten them very much by tinning them during the day—that is, let two men take hold of the light, one at top and one at bottom, and then turn it over. The inside will thus be exposed to the air, and the inner surface of the glass will be dried. All sorts of pits, whether for hardy plants or for forcing, should occasionally have the lights turned during the season, particularly in winter and spring.—W. KEANE.

DOINGS OF THE LAST WEEK.

Much of the work up to and including the 11th instant was done in-doors, except when such work as wheeling, turning heaps of soil, and chopping wood for furnaces was carried on. Many cuttings of hedging plants were put in, and placed where they would have a little bottom heat. Plants were shifted, houses cleaned, and orchard-house trees pruned, washed, and regulated. We might have trenched and ridged but for our reluctance to bury snow in the ground, which with us is generally cold enough without doing so, and as the house work wanted attention we put off what might have been done out of doors until more seasonable weather, making preparations to sow many seeds under glass in the beginning of the next week.

The 11th was a very singular day with us. When the thermometer against a wall, at 5 feet from the ground, indicated 5° below the freezing point, rain was falling heavily; and though during the day the temperature rose to nearly 32°, the rain froze almost as fast as it fell, rendering walks that had been previously swept like so many sheets of glass, and therefore dangerous to traverse. Copings of walls, and even walls themselves, exposed to the south, as the wind was due south, became a sheet of ice. Doors in garden walls that go very easily were so frozen in their places as to become immovable; and one or two which we could not well allow to remain shut, we had to relieve by heating all round the sides with a mallet, so as to break the ice. The covering of the wall and wood of the trees with ice will do the latter no harm; but when the bricks are soft we have seen large holes show themselves after a thaw. As to insects, none living could well escape, and even myriads of eggs would be destroyed. We once noticed some Pear trees that were much covered with the small scale insect; but such an ice covering as the above for a couple of days left the bark almost free of them. The next spring they and the injured bark fell off, or could easily be brushed off with a hair broom. Since then we have sometimes syringed such trees all over when we have anticipated a sharp frosty night, and we have noticed that this was most effectual when warm water was used to wet the trees and the wall.

Gutters and Spouts of Houses.—These wanted looking after, even in gardens, and more especially in mansions, where the rain from the roofs passed to lead gutters surrounded by a

parapet. The danger in such a day as Saturday arose from the orifices of the carrying-off pipes being frozen up. We had all ours cleared out on account of the snow; but the pipes were so frozen on the 11th, that if they had not been opened with large weeding irons the water would have accumulated in the gutters, and then have found its way through the roofs and the ceilings below. Even in the garden we found at the top of the discharge pipes the little tanks that received the water from the spouting filled with masses of solid ice, though quite free and open in the morning. It is of comparatively little use crying out after the mischief is done; but forgetfulness of the tops of discharge pipes becoming firmly iced-over in such a day as the 11th might cause much discolouring and falling of ceilings in upper rooms. In the case of common spouts round buildings, we expect to hear of much injury to them from the weight of ice in them, and hanging in huge icicles from them. Whilst in such a state they could not serve their purpose of taking the water away from the walls.

This reminds us that the whole subject of spouting requires consideration, and those who have had much experience with it would confer a favour by stating the best material to use. On the whole we are inclined to favour zinc or galvanised iron, only the galvanising renders it brittle. Tin is the most easily managed, and when kept painted will last a considerable time; but if the painting is neglected it soon rusts out. Cast-iron piping in lengths of 6 or 9 feet, well painted, is very lasting where it is not likely to be interfered with; but in places where workmen come in contact with it, it is found to be very brittle in severe frost. Even when placed in a lofty position, such pipes are apt to chip and crack when filled with ice, which they are very likely to be, as spouting round buildings does not generally have a greater fall than is necessary to take away the rain water. This is all very well in weather that is not frosty; but in such weather as that which occurred on the 11th, and even in circumstances less favourable for producing the same results, the pipes soon become filled with ice, even with the outlets from them all open. Iron pipes are more apt to crack and break from frost if painting is neglected. In large establishments, keeping the spouting in good order forms such an item of expenditure, that any suggestions on the subject would be interesting. One objection to cast iron is the weight, involving the necessity for stronger brackets for fixing; and when used for garden houses or pits it is well to have the best hard wood, in the shape of bricks, fixed in the wall for fastening the brackets to by means of screws.

General work has been much the same as last week. All things protected under hand-lights, and in cold pits and frames, as Calceolarias, Cauliflowers, Lettuces, Endive, and Radishes, have given little trouble, as they have not been uncovered for eight days, and even what was uncovered, as Asparagus in a hothed frame, was little the better for it, as the weather was too dull to green the shoots properly. The wind on the 11th turning to the south-west, we may expect ere long the disappearance of the snow, and brighter and sunnier weather, when everything will be again exposed to the light. The snow has been a great protection for all out-door vegetables, and even Turnips and Wheat in the fields. Our best farmers have long since secured their Turnip crops in heaps, protected from frost and vermin.

Our window-gardening friends have had rather a troublesome time, but there has been nothing to prevent success, if the plants are kept clean, kept close to the window during the day after the room was warmed by the fire, and placed in the middle of the room in the coldest nights. Bulbs will now be very attractive, and it will be well to have some in glasses that the young scions of the family may be interested in seeing the rooting process. The fostering of such tastes in those beyond babyhood often proves a source of enjoyment for a lifetime.—R. F.

TRADE CATALOGUES RECEIVED.

B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, N.—*Descriptive Catalogue of Flower and Vegetable Seeds.*

Lucombe, Pince & Co., Exeter.—*Select List of New and Rare Plants, Conifers, Trees, and Shrubs, &c.*

Robert Parker, Exotic Nursery, Tooting, Surrey.—*Catalogue of Agricultural, Flower, and Vegetable Seeds.*

Smith & Simons, 1, Buchanan Street, Glasgow.—*Cultural Guide and Descriptive Seed Catalogue.*

James Cuthbert, Clayton Square, Liverpool.—*Descriptive Catalogue of Vegetable and Flower Seeds.*

COVENT GARDEN MARKET.—JANUARY 15.

THERE are no alterations worth notice. A slight improvement may be observed in the demand for a few choice articles, but that is partial and limited to country orders. Very large arrivals of Oranges are reported, and prices must recede.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples $\frac{1}{2}$ sieve	2	6	to	4	Melons each	2	0	to	3	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0	0
Cherries lb.	0	0	0	0	Oranges 100	5	0	10	0	0
Chestnuts bush.	8	0	14	0	Peaches doz.	0	0	0	0	0
Currants $\frac{1}{2}$ sieve	0	0	0	0	Pears (dessert) .. doz.	2	0	4	0	0
Black do.	0	0	0	0	Pine Apples lb.	4	0	6	0	0
Figs doz.	0	0	0	0	Plums $\frac{1}{2}$ sieve	0	0	0	0	0
Filberts lb.	1	0	0	0	Quinces doz.	2	0	3	0	0
Cobs lb.	1	0	0	0	Raspberries lb.	0	0	0	6	0
Gooseberries quart	0	0	0	0	Strawberries lb.	0	0	0	0	0
Grapes, Hothouse lb.	6	0	8	0	Walnuts bush.	10	0	18	0	0
Lemons 100	8	0	12	0	do. per 100	1	0	2	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	0	0	to	0	Leeks bunch	0	3	to	0
Asparagus 100	6	0	10	0	Lettuce per score	1	0	1	6
Beans, Kidney 100	0	0	3	0	Mushrooms pottle	2	0	3	0
Beet, Red doz.	2	0	3	0	Must. & Cress, punnet	0	2	0	0
Broccoli bundle	0	6	1	6	Onions per bushel	3	0	5	0
Brus. Sprouts ½ sieve	2	0	2	6	Parsley per sieve	4	0	5	6
Cabbage doz.	1	4	2	0	Parsnips doz.	0	9	1	0
Capisiums 100	0	0	0	0	Potatoes bushel	4	6	5	6
Carrots bunch	0	6	0	8	Kidney do.	4	0	6	6
Cardiflower doz.	3	0	6	0	Radishes doz. bunches	1	0	1	0
Celery bundle	1	6	2	0	Rhubarb bundle	0	9	1	0
Cucumbers each	1	0	2	0	Savoy doz.	1	0	2	0
Endive doz.	1	0	0	0	Sea-kale basket	2	0	3	0
Fennel bunch	0	3	0	0	Shallots lb.	0	8	0	0
Garlic lb.	0	8	0	0	Spinach bushel	4	0	5	6
Herbs bunch	0	3	0	0	Tomatoes per doz.	0	0	0	0
Horseradish bundle	2	6	4	0	Turnips bunch	0	4	0	6

TO CORRESPONDENTS.

GRAFTING WAX (Southampton).—Take common sealing wax, any colour but green, one part; mutton fat, one part; white wax, one part; and honey, one-eighth part. The white wax and the fat are to be first melted, and then the sealing wax is to be added gradually, in small pieces, the mixture being kept constantly stirred; and, lastly, the honey must be put in just before taking it off the fire. It should be poured hot into paper or tin moulds, to preserve for use as wanted.

HAYS'S PATENT STOVE (T. C.).—You are only one of many who cannot obtain peat charcoal. Surely there must be some to be had of the company who manufacture it for manure. Can any of our readers give relative information?

GAS LIME FOR MANURE (C. B. F.).—It is a compound of sulphate of lime—which becomes gypsum (sulphate of lime) by exposure to the air; and a little ammonia is mixed with it. It has been found very beneficial to all the Clovers, Turnips, and other members of the Cabbage family. Thirty bushels per acre are sufficient. The idea that this manure encourages the growth of coarse Grasses is quite erroneous.

CONFREY (J. W. Edgar).—It is a native of England, and commonly found on the banks of wet ditches and rivulets. It is called by botanists *Symphytum officinale*. The roots contain much mucilage, and are employed in making drinks for those afflicted with coughs and other internal irritations. The leaves are aromatic, and used to give a flavour to cakes, &c. The young stems and leaves are boiled for use as a culinary vegetable.

LILIAM MONADELPHUM SUPERBUM.—We are informed that this can be had of M. Max Leichlin, Karlsruhe, Baden.

ORCHID BASKETS.—A correspondent, "H. H.," wishes to know where these figured in Appleby's, "Orchid Manual" can be purchased.

VINE IN A FERN CASE (Valentine Dalton).—A Black Hamburgh or a Royal Muscadine will be the best Vine, if your case is to stand in a room and have no heat except what the room affords. For your box 2½ feet long, 1 foot wide, and 18 inches deep for the Vine, we advise you to have the bulk of the soil fibrous loam, and mixed with a peck of lime rubbish, half a peck of broken boiled bones, and as much charcoal in small pieces, not dust. In this the Vine will grow well, and you can keep up the strength by rich top-dressings.

GLADIOLUS ON NORTH ASPECT (Fred).—The Gladioli will not succeed on the north side of a house, where it will have but little sun. It should have a good situation, and no shade whatever. To make a showy bed the bulbs should be planted from 9 inches to 1 foot apart; and in planting, silver sand will answer best to place around the bulbs; but clean river sand will do.

LORELAS AND TROPICOLMUS FROM SEED (Idem).—Plants from seed grow much more freely than those from cuttings, and they flower very well the first year, but not so early as plants struck from cuttings.

PAINTING A GREENHOUSE (Idem).—You ought to have given the greenhouse at least one coat of paint before it was put up; and as soon as the putty, after glazing, had become hardened, two or three coats of lead and oil paint ought to have been given. We advise you to lose no time in having it well painted, taking care to have the woodwork thoroughly dry before applying the paint, otherwise painting is worse than useless.

CAMELLIA BLOOM BUDS FALLING (E. N.).—The cause of the buds falling is an insufficient amount of food supplied to them by the roots, in consequence of these being inactive or not numerous enough to maintain the plant in a healthy state. You can only effect a remedy by promoting a more healthy root action. Probably the plant requires a change of soil, the drainage may not be good, or too many buds may have been left. One or at most two buds are sufficient to leave upon each shoot.

CAMELLIA LEAVES STICKY (A Subscriber).—We think that the Camellias are infested with scale; and in that case your remedy will be the washing of the plants with a sponge dipped in a solution of soft soap at the rate of 4 ozs. to the gallon of water, giving the plants a thorough cleaning on the under as well as the upper surface of the leaves, and the shoots and branches should be well washed. This will also free the plants of the mouldy spots, and be very beneficial. The Primula leaves are probably sticky from the plants being placed under the Camellias, and their leaves being covered with the secretion of the scale insect on the Camellias. If you perceive very small pale brown spots on the midribs of the leaves, or at the angles formed by the junction of the leaves or buds with the shoots, pick them off with the point of a knife. These are the scale insects that make the leaves sticky and cause the mouldy spots. Fumigation with tobacco will not be effectual. You should keep the plants well supplied with water, but not give any until the soil becomes dry; then afford a good supply. A temperature of from 40° to 45° by night, and of 50° by day, is sufficient at this season, and in that your Camellias ought to swell their buds well.

AQUATIC PLANTS FOR PONDS (J. F. Boyd).—Nothing is more simple or easy than the culture of aquatic plants, providing the bottom is covered with a few inches thick of mud, and the plants are well planted. Before the plants are put into the water they should be fastened to a piece of charred turf containing enough soil to sink it. Small or large stones in proportion to the size of the plants will answer the same purpose. Thin copper wire is best for securing the plants to the turf or stones. The plants may then be dropped into the water at the places required. In the deepest parts you may plant *Najas lutea*, *Nymphaea alba*, *Alisma plantago*, *A. lanceolata*, *Iris pseud-acorus*, *Ranunculus hydrophyllum*, *Typha latifolia*, and *Vallisneria spiralis*; whilst near to the margin you may plant, but in water of a depth of 1 foot or a little more, *Stratiotes aloides*, *Vallisneria spiralis*, *Pontederaca cordata*, *P. lanceolata*, *Myriophyllum spicatum*, *Hydrophyllum purpureum*, *Hottonia palustris*, *Butomus umbellatus*, *Utricularia vulgaris*, *Ranunculus aquatilis*, *Hydrocharis mors-ranunculi*, *Carex acutifolia*, *Potamogeton densum*, *P. gramineus*, *Sagittaria sagittifolia* and its double variety, *Cyperus glomeratus*; and on the margin, in the water but not overhead, *Cardamine pratensis*, *C. pratensis flore pleno*, *Caltha palustris*, *C. palustris flore pleno*, *Ranunculus tripartitus*, *Justicia pedunculata*, *Menyanthes trifoliata*, and *Lysimachia thyrsiflora*.

LIMEWASHING GOOSEBERRY BUSHES (Ignoramus).—Limewash applied to Gooseberry bushes will not injure them in the least; on the contrary, it will free the stems of moss, and to a certain extent prevent the depredations of birds. Nothing is so effectual in keeping birds from the buds as stringing the bushes with worsted, extending this from branch to branch, and crossing it as much as possible, so as to form meshes about 2 inches wide.

AMERICAN BLIGHT (Idem).—The presence of American blight is indicated by the branches having a white snow-like down hanging on them, and the shoots swelling where it appears. The remedy is to apply train oil with a brush to the parts affected.

SCALE ON PEAR TREES (Idem).—This may be detected by the oblong speck-like appearance of the insect on the shoots, and especially on the spurs. The insects may be removed very readily with the point of a knife, and a dressing of train oil will destroy them. It should be applied whilst the trees are at rest.

ORCHARD TREES UNFRUITFUL (New Subscriber).—We think your only remedy is to have the ground drained. An occasional flooding would do no great harm; but as your soil is a stiff loam, too much water probably lodges in the subsoil, and owing to its not passing away, the growth does not ripen well. We know a similar case, where drainage effected a complete cure. It is difficult to explain why some trees should be fruitful and others unfruitful. Unfruitfulness is sometimes constitutional, sometimes an effect of soil and climate. Carter's Prolific Raspberry will no doubt bear, only do not shorten the canes much, as from their vigour the side shoots may prove unfruitful. We should be glad if you would give us the names of the kinds of Apples that bear well in your soil. Such information is very valuable.

WIRE NETTING FOR PROTECTING FRUIT TREES FROM BIRDS (J. N. P.).—The mesh of the wire netting to exclude small birds should not exceed 1 inch. We presume you intend it to be moveable, and only to be employed to protect the buds in spring and the fruit in summer, in which case it would be excellent; but if kept over the trees permanently we fear it would exclude light to an injurious extent.

BIGNONIA JASMINOIDES NOT FLOWERING (L. E.).—The piece of shoot enclosed was that of the *Jasminum* Bignonia, a very handsome climber for a greenhouse. The plant is probably too liberally potted, and is growing very freely. We would confine its roots, still allowing them enough of pot room for the plant to make a good growth. It should be kept well supplied with water whilst it is growing, but when at rest little water will be necessary. The shoots must be kept moderately thin, so as to expose them fully to light and air, and the lighter and nearer they are to the glass the better will be the chance of bloom. The fern fronds sent are those of *Adiantum assimile*, or a weak form of *Adiantum cucullatum*, but we are unable positively to ascertain which without seeing better specimens.

STOVE PLANT CULTURE (A Seven-years Subscriber).—The *Allamandias* may be pruned in February, cutting out the old and bare straggling shoots, and shortening the growths of the previous year, leaving enough young shoots or wood to furnish new shoots. When the plants have begun to grow they should be carefully turned out of the pots and re-potted, removing as much of the old soil from amongst the roots as possible, using for that purpose a pointed piece of wood, and taking care not to injure or disturb the roots more than can be avoided. The plants, if large, may be placed in the same size of pot as before; but if large specimens are wanted and the plants are young and vigorous, it would be well to give them larger pots. Good drainage and clean pots should be afforded, and a compost of equal parts of sandy fibrous peat, turfy loam, and leafmould, well mixed with about a fourth part of pieces of charcoal from the size of a pea up to that of a hazel nut, and silver sand. The peat and loam should be torn in pieces with the hand, and be used rather rough, pressing the soil rather firmly about the roots in potting. The compost should be dry rather than wet. A gentle watering may be given after potting, and the plants should be sprinkled overhead twice daily with water of the same temperature as the house, and every available

surface in the house should also be kept moist, so as to maintain a moist atmosphere. The temperature should be from 60° to 65° at night, and from 75° to 80° by day with sun. Care should be taken not to overwater the plants, but to keep the soil moist until the plants are growing freely, when liberal supplies of water will be needed. *Clerodendron Thomsonei* will succeed with the same treatment as described for the *Allamanda*. *Bougainvillea speciosa* and *speciosa* may have all the old bare shoots cut off, preserving the best well-ripened shoots, of which only the points should be taken off. The plant may be potted in a compost of sandy fibrous loam two-thirds, and one-third leaf mould, with a free admixture of sharp sand. Every encouragement should be given to ensure a good growth, which, being made, the plants should have the lightest and most airy situation that can be given, and the supply of water must be gradually reduced to just sufficient to keep the foliage fresh. The *Stephanotis* will thrive if treated in the same manner as the *Allamandas*; only in pruning, the shoots should not be shortened, merely removing the long bare shoots, and thinning the others out if very close together on the trellis. Leave the strongest, best-situated shoots with prominent eyes.

CLIMBERS AND PLANTS FOR CONSERVATORY (Bellis).—We cannot recommend annual climbers for a conservatory. They are of too short duration, and leave gaps when they are over. Permanent plants are far better. We would advise you to procure *Kennedy* *inophylla floribunda*, *Jasminum gracile variegatum*, *Lapageria rosea*, *Mandevilla sanderiana*, *Passiflora Newmanni*, *Rhynchospermum jasmynoides*, and *Sollya linearis*. If you require any for the back wall, *Luculia gratissima* and *Labrothamnus elegans* would probably succeed, only the climbers on the roof must not be nearer them than 3 feet. A few good plants for a conservatory are *Acacia armata*, *oleifolia elegans*, *longifolia macrocarpa*, and *grandis*; *Chorozema cordata splendens*, *Citrus japonica* (Otaheite Orange), and *C. nobilis* (Mandarin Orange), *Coronilla glauca variegata*; *Daphne indica*, *Erythrina candida-galli*, *Hibbertia Reidi*, *Indigofera decora*, *Elaeagnus coccinea superba*, *K. miniata grandiflora*, *Lilium auratum*, *L. laucifolium*, *Lilium trigynum*, *Monochaetum ensiferum*, *Myrtus communis*, *Polygala Dalmanisiana*, *Rhododendron jasmyniflorum*, *Statice brassicifolia*, *S. profusa*, *Wisteria corymbosa*, and *Vallota purpurea*. You will, of course, have *Camellias*, *Azaleas*, *Primulas*, *Cinerarias*, *Cyclamens*, *Calceolarias*, *Pelargoniums*, and *Fuchsias*; and if you have a cold pit you may wish safety indulge in a few of the hard-wooded plants; but unless you have a pit to move them into in summer your success will be very indifferent with them. We name a few:—*Acrophyllum venosum*, *Aphellex macrantha purpurea*, *A. prolifera* *Barnesi*, *Boronia Drummondii*, *B. serrulata*, *Chironia glutinosa*, *Correa speciosa major*, *Brilliant*, and *delicata*; *Crocea saligna major*, *Dracophyllum gracile*, *Dillwynia Henchmanni*, *Eriostemon intermedium*, *Genetilla tulipifera*, *Grevillea panicea splendens*, *Leschenaultia formosa*, *Fimelia decussata*, *P. Hendersoni*, and the following *Epacris*—viz., *hyacinthiflora*, *Lady Penmore*, *The Bride*, *delicata*, *grandiflora rubra*, *rubella*, and *miniata splendens*. They are very desirable for early spring and early summer bloom. After blooming they should be removed to a cold pit. A few plants having ornamental or variegated foliage will add much to the effect—*Arundo donax variegata*, *Chamaerops Forluni*, *Dracena australis*, *Fartichum grande*, *Hydrangea japonica variegata*, *Isoplexis gracilis*, *Phormium tenax*, *Sansevieria carnea variegata*, and *Sedum Scholdii variegatum*. We have, probably, named many more than you will require; but you may select from them what you will have accommodation for. Do not obtain too many, but allow every plant plenty of room, as a few plants well grown will be more satisfactory than many crowded together and spoiling each other. *Balsams*, *Coleus argentea*, *C. pyramidalis aurea*, *C. pyramidalis coccinea*, *Cockscombs*, *Globe Amaranths*, *Sensitive plant*, *Thunbergia alata*, and its white variety, are fine tender annuals for conservatory decoration, requiring to be raised and grown in both beds. *Achimenes* would succeed, also *Gloxinias*, if you were to forward them in the beds and grow them there until showing for bloom. *Chionanthus Danpurii* and *Taeniola Van Volckm* would most likely succeed in your house.

STRAWBERRY FORCING (Idem).—Presuming the plants to be in pots well filled with roots, you may remove them to a shelf near the glass, where they can have abundance of air. The plants should be carefully watered until they are coming into flower; afterwards they should be well supplied with water, and when the blooms are setting the pots may be put in saucers kept full of water. You cannot give too much air and light. Strawberries will do well in any house having a greenhouse temperature. We should prefer a well-grown plant of *Pteris tricolor* to *Blechnum cornu-adeense*, as the former can be kept in one-fourth the space, and is much richer in colour; but a well-grown plant of the *Blechnum* is very ornamental from its graceful tree-fern-like habit, and the rich pink of its young fronds.

GRAFTING ROSES (J. P.).—Manetti stocks grafted with *Roses* in February or early in March, according to the season (it being necessary to graft when the sap in the stocks is rising, and before the seasons have begun to grow), are in general successful; but not so much so as when the stocks are placed in a frame over a gentle hotbed and kept close. Grafting being performed by the whip process, the junction should be clayed; and the best protection that can be afforded is to cover the union firmly with soil, raising it around the stock in the form of a cone, with one or two of the eyes of the graft only left above the surface. If the grafts succeed they will show bloom buds, and on the vigour of the plants at the usual season, dependant, of course, on the vigour of the plants and the maturity of the wood used for grafting. Bottom heat insures a more speedy and certain union of stock and graft. Stocks may be planted in soil over a hotbed and covered with a frame kept close, and being grafted they will succeed; but the success is not so certain, nor the growth so good, as when the stocks are established in pots. The grafted plants may be removed in May, after they have been well hardened-off, and if carefully removed and watered the check will be slight. The union of stock and graft will be complete in three or four weeks; but the time is dependant on the temperature. In the open ground it will be about six weeks. The best indication of the union being effected is the putting-forth of fresh shoots, and when these are 3 inches in length the union may be considered complete. There is not, that we are aware, any objection to the grafting of Briar stocks in February or March. It was practised before the Manetti was known as a stock; but the latter is now in greater repute, and we think, deservedly so. The number of eyes left on the graft, or their being long or short, may not have any great effect on the success of the operation, but it has on the plants' after-growth, for the shorter they are the more vigorous will be the growth of the shoots made by the graft. Cuttings of the Manetti Rose will grow if put in in spring, but not so well as if planted in autumn.

ROSES IN DECEMBER AND JANUARY (M. R.).—If *Roses* are required for the time they must not be allowed to bloom more than one previous series. Their flower buds should all be cut off by the 1st of August. The plants should then be potted in 6, 8, or 12-sized pots, and placed aside. Before frosts set in they should be taken into the vinery, a gentle heat being afforded in very cold weather, and air should at all times be given them. I do not practise this myself, as I have *Roses* sufficient for my purpose out of doors. I cut my best bouquet January 4th. In mild winters I have them till February. The best *Roses* for glass houses are the *Teas*, *Tea-scented Noisettes*, and *Hybrid Perpetuals*. After a little time they will supersede all others in or out of doors. Moss and variegated *Roses* at present must be looked for among the summer *Roses*. The following is a list of the best of *Roses* for the purpose required:—*Tea-Rose*: *Adam*, *Bouquet*, *Safrano* (these two are only good in a bud state); *Gonbault*, *peculiar scent*; *Elise Sauvage*, *Devoniensis*, *Madame Margottin*, *Vicomtesse de Cazes*, *Madame Willebrord*, *Souvenir d'un Ami*, *Souvenir d'Elise*, *Kobus*, and *Sombreuil*. The last is the hardiest of the race. *Tea-scented Noisettes*: *Marcel Niel*, *Solfaterra*, *Gloire de Dijon*, *Lamarque*, *Celine Forestier*, *Isabella Gray*, and *Triomphe de Rennes*. *Hybrid Perpetuals*:—*Rose-coloured*: *Comte de Nanteuil*, *William Griffiths*, *Bernard Prevost*, *Comtesse Cecile de Chabillant*, *Louise Margottin*, *Baron Gouelle*, and *Duchesse de Morny*. *Black*: *Marguerite de St. Amand*, *Caroline de Sansal*, *Souvenir de la Malmaison*, *Duchesse d'Orleans*, and *Saint des Anges*. *White*: *Madame Vidol*, *Madame Rivers*, *Miss Ingram*, *Madame Freeman*, and *Madame Alfred de Rougemont*. *Crimson*: *Charles Leclerc*, *Senateur Vaisse*, *Madame Victor Verdier*, *Victor Verdier*, *Jules Margottin*, *Madame Rontin*, *Marcel Vaillant*, *Madame Julie Baran*, *Duchesse de Caylus*, *Lady Suffield*, *Baron Adolphe de Rothschild*, and *Alfred Colomb*. *Dark Crimson or Maroon*: *Pierre Notting*, *Prince Camille de Rohan*, *Empereur de Maroc*, *Duc de Cazes*, and *Souvenir de Dr. Jaccard*, a beautiful *Rose*.—W. F. RADCLIFFE.

CHARCOAL ASHES (A Young Gardener).—They would not do as a substitute for peat; but they would be an excellent manure for any crop. Spread them over any plot just before digging, at the rate of about forty bushels per acre.

BURNING MOSS GREEN (J. E.).—Cover it over half an inch deep with dry sand, and dry thoroughly by exposure in an oven heated sufficiently just not to burn it.

NAMES OF FRUITS (Trilob).—*Aphel*—1, Trumpeter; 2, Louis's Pearmain; 3, Blenheim Pippin; 4, Winter Greening; 5, Hollandbury; 7, Costard or Catshead; *Pear*: 1, Verulam.

NAMES OF PLANTS (Prill-well).—It is only a fasciated stem of *Daphne laureola*, commonly called *spurge Laurel*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending January 14th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 8	30.178	30.026	34	29	38	38	N.E.	.00	Densely overcast; overcast; slight thaw.
Thurs. . 9	30.184	30.166	32	28	39	38	N.E.	.00	Dark and hazy, densely overcast; overcast, frosty.
Fri. . 10	30.186	30.166	31	29	39	38	S.E.	.01	Overcast; fine but cold; overcast at night.
Sat. . 11	29.930	29.822	35	29	39	39	S.E.	.23	Overcast, slight rain; overcast, rain; hazy at night.
Sun. . 12	29.910	29.757	46	35	40	38	S.W.	.64	Hazy, quick thaw; fine; overcast and mild, brisk wind.
Mon. . 13	29.695	29.419	53	38	41	38	W.	.08	Heavy clouds, rain; cloudy, slight rain; boisterous.
Tues. . 14	29.695	29.615	53	42	42	39	S.W.	.08	Overcast; cloudy and fine; rain, densely overcast, and very boisterous.
Mean	29.998	29.844	41.60	32.86	39.71	38.14	..	0.43	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GREEN GEESE.

I SEE you had an article on Geese in the Journal. Relative to the Green Geese, it is defective; and if Mr. Dixon should

ever be in Norwich at the fair held in the beginning of April, he will see goslings, fit for eating, in the market, mostly at 10s. each, the produce of Geese which lay three times a year. I know of none anywhere else. They are called Green Geese because they are fit to kill just when the country is becoming green.—H. W.

[You are correct in all but the derivation of the name. They

are called Green Geese because they were formerly killed while covered with their green down. Fifty years ago they were killed and scalded. The *gourmets* of that time used to say such Geese were too old if they had a bone; others condemned them unless they were young, and consequently soft and pulpy enough to allow the meat to be sucked through a quill. Green Geese are to be had in Leadenhall in February. The supply only ceases when full-grown, naturally-reared birds supersede them.]

DUCKS FROM THE ISLAND OF PERU.

A CORRESPONDENT signing himself "T. C. H.," on page 20, desires information about the island of Peru. Having, I imagine, been at school more recently than he has, I am, perhaps, better up in my geography. The island of Peru, from which the magnificent white Musk Ducks come, is in a different part of the world from Peru. If "T. C. H." will refer to a map of the islands in the North Pacific Ocean, he will find that close upon the equator is a group of islands, called the Gilbert Islands; and amongst these, in south latitude $1^{\circ} 10'$, and east longitude $176^{\circ} 5'$ (if the map is on a sufficiently large scale), he will find the island of Peru. This island, let me suggest to those whose curiosity has been excited, is noted for the beauty of the Ducks which inhabit it, and is that which is incidentally alluded to in the advertisement.—W. H. K.

HANLEY POULTRY SHOW.

THE third annual Exhibition of Poultry, Pigeons, Cage Birds, and Rabbits was held in the Covered Markets and Town Hall, Hanley, on the 7th, 8th, and 9th of January. The following is the list of awards:—

DORKINGS (Coloured).—First and Extra Prize for best pen of Dorkings, Mrs. F. S. Arkwright, Etwell Hall, Derby. Second, J. D. Hewson, Stafford.

DORKINGS (Any other variety).—First, Withheld. Second, Rev. E. S. Tideman, Brentwood.

SPANISH.—First and Extra Prize for best pen of Spanish, Polish, or French, F. James, Peckham Rye. Second, H. Beldon, Bingley. Highly Commended, E. Comber, Warrington; J. Walker, Wolverhampton; J. Mansell, Longton; J. Wright, Melton Mowbray.

COCHIN-CHINA (Cinnamon and Buff).—First, Col. Stuart Wortley, Grove End Road, London. Second, H. Tomlins, Mosley. Highly Commended, C. W. Brierley.

COCHIN-CHINA (Any other variety).—First and Extra Prize for best pen of Cochins or Dark Brahmans, E. Tudman, Whitechurch. Second, J. R. Reddard, Bristol. Highly Commended, H. Hobson, Walsall.

BRABMA POOTRA (Dark).—First and Extra Prize for best pen of Brahmans, H. Lacy, Holben Bridge. Second, H. Lingwood, Bucklesham. Highly Commended, J. Heath, Nantwich.

BRABMA POOTRA (Light).—First, H. Lacy, Holben Bridge. Second, A. O. Worthington, Burton-on-Trent.

HAMPELTONS (Black).—First, J. Walker, Denton. Second, W. Green, Keighley. Highly Commended, W. Holt, Middleton; Rev. W. Sergeantson, Shrewsbury.

HAMPELTONS (Golden-pencilled).—First, F. D. Mort, Stafford. Second, G. Swift, Fulford. Highly Commended, W. Kirby, son, Trentham.

HAMPELTONS (Silver-pencilled).—First and Extra Prize for best pen of Hamburgs, Duke of Sutherland. Second, H. Beldon, Bingley. Highly Commended, Messrs. W. A. S. Bairstow, Bingley; J. Platt, Bolton.

HAMPELTONS (Gold-banded).—First, H. Boushaw, Uttoxeter. Second, T. Burgess, Whitechurch. Highly Commended, W. A. Hyde, Ashton-under-Lyne; J. Davis, Birmingham.

HAMPELTONS (Silver-spangled).—First and Second Extra Prize for Second best pen of Hamburgs, Duke of Sutherland. Second, H. Beldon. Highly Commended, Mrs. Flynn, Kidsgrove; Duke of Sutherland.

POLISH (Any variety).—First, J. Heath. Second, P. Unsworth, Newton-le-Willows. Highly Commended, R. Charlesworth, Manchester; J. Percival. Commended, H. Beldon.

FRENCH (Any variety).—First, Col. Stuart Wortley. Second, H. Beldon. Commended, R. Brown, Cheadle Hulme; O. Drowry, M.D. Walsall.

GAME (Black-breasted Red).—First, G. Swift. Second, A. O. Worthington. Highly Commended, G. Bagnall, Draycott; T. Burgess; Rev. W. J. Mellor, Colwick Rectory, Notts.

GAME (Brown and other Reds).—First and Extra Prize for best pen of Game, C. Barnett, Nantwich. Second, Messrs. Church & Houlding, Nantwich. Highly Commended, G. Swift.

GAME (Any other variety).—First, H. M. Julian, Hall. Second, G. Lunt, Market Drayton.

GAME.—*Cock*.—First, T. Whittingham, Nantwich. Second, C. W. Brierley. *Cockerel*.—First and Extra Prize for best Single Cock or Cockerel, G. Swift. Second and Highly Commended, T. Burgess.

DORKINGS (Any variety).—*Cock*.—First, Hon. Miss Douglas Pennant, Penhryn Castle. Second, F. S. Arkwright.

COCHIN-CHINA (Any variety).—*Cock*.—First and Extra Prize for best, Cochins or Brahma Cocks, E. Tudman. Second, F. E. Richardson, Uttoxeter. Commended, O. Dewry, M.D.; A. O. Worthington.

BRABMA POOTRA (Any variety).—*Cock*.—First, L. Poulton, Biddulph. Second, Hon. Miss Douglas Pennant. Commended, H. Dowsett, Melsby, Chelmsford; F. James.

HAMPELTONS (Any variety).—*Cock*.—First and Extra Prize for best Brahma Pootra or Hamburg Cock, Duke of Sutherland. Second, H. Beldon.

GAME BANTAMS (Black-breasted Red).—First, J. H. Lasbrey, Uttoxeter. Second, W. Hodgson, Darlington. Highly Commended, Rev. E. S. Tideman. Commended, W. Baker, Colbridge.

GAME BANTAMS (Any other variety).—First and Extra Prize for best

pen of Game Bantams, H. Ashton, Prestwich. Second, W. Hodgson, Darlington.

BANTAMS (Gold or Silver-laced).—First, Withheld. Second, H. Draycott, Hamblestone.

BANTAMS (White, Clean-legged).—First, Messrs. S. & R. Ashton, Mottram. Second, H. Beldon.

BANTAMS (Black, Clean-legged).—First and Extra Prize for best pen of Gold or Silver-laced White or Black, Messrs. S. & R. Ashton. Second, Messrs. Tonkin & Tuckey, Bristol. Commended, Miss Bowden, Uttoxeter.

DUCKS (White Aylesbury).—First and Extra Prize for best pen of Ducks, Mrs. M. Scamons, Aylesbury. Second and Second Extra Prize for Second best pen of Ducks, E. Leech.

DUCKS (Rouen).—First, T. Dean, Keighley. Second and Highly Commended, T. Burgess.

DUCKS (Any other variety).—First, Rev. W. Sergeantson. Second, H. Savile, Ollerton.

GEES (White).—First and Extra Prize for best pen of Geese, J. Lycett, Stafford. Second, T. Burgess.

GEES (Grey or Mottled).—First, C. T. Dean, Astbury. Second, J. White, Wakefield. Commended, W. H. Stott, Rochdale.

TURKEYS.—First, E. Leech. Second, T. Burgess. Highly Commended, Mrs. Dale, Scarborough; F. E. Richardson. *Poults*.—First, E. Leech. Second, G. Swift. Highly Commended, F. E. Richardson.

TURKEY.—*Cock*.—First, E. Leech. Second, A. O. Worthington.

SELLING CLASS.—First and Second, N. Cook, Chesham. Third, G. Lamb, Compton.

Extra Prize to the Exhibitor gaining the greatest number of Prizes for Poultry, Duke of Sutherland.

PIGEONS.

TUMBLERS (Almond).—First, J. Fielding, Rochdale. Second, J. Hawley, Bingley. Highly Commended, Messrs. Newbitt; J. Beward, Coventry.

TUMBLERS (Any other variety).—First, J. Fielding. Second, J. Hawley. Highly Commended, J. Grace, Nantwich; T. Newell, Ashton. Commended, H. Yardley, Birmingham.

CARRIERS.—First and Extra Prize for best pen of Tumblers, Carriers, Pouters, Balbs, Beards, or Runts, J. Hawley. Second, — Gamon, Chester. Highly Commended, H. Yardley. Commended, — Skidmore, Nantwich.

POUTERS.—First and Second Extra Prize for Second best pen of Tumblers, Carriers, Pouters, Balbs, Beards, or Runts, A. Heath, Calne. Second, J. Hawley. Highly Commended, H. Yardley. Commended, A. Heath.

BALBS.—First and Second, J. Fielding.

BEARDS.—First, H. Yardley. Second, J. Fielding.

RUNTS.—First and Second, H. Yardley. Commended, H. Tomlinson, Birmingham.

JACOBS.—First, J. Hawley. Second, J. Edge, Birmingham. Commended, W. Massey, Kent; J. Thompson, Bingley.

FANTAILS.—First, Messrs. Hewitt, Lincolnshire. Second, J. Beward. Highly Commended, H. Yardley.

TRUMPETERS.—First and Second Extra Prize for best pen of Jacobsins, Fantails, Trumpeters, Owls, Nuns, or Turbits, J. Hawley. Second, W. Gamon. Highly Commended, Mrs. T. Robson, Penbridge; J. Thompson; J. Hawley; Rev. W. J. Mellor.

OWLS.—First and Extra First for best pen of Jacobsins, Fantails, Trumpeters, Owls, Nuns, or Turbits, J. Fielding. Second, J. Fielding. Highly Commended, T. Newell, Ashton. Commended, Messrs. Newbitt, Epworth.

NUNS.—First, J. Thompson. Second, J. Hawley.

TURBITS.—First and Second, T. Robson. Highly Commended, J. Fielding. Commended, R. Liddall, Shetfield.

BARDS.—First, Extra Prize, and Second for best pen in the Barb and subsequent classes, Rev. W. J. Mellor. Highly Commended, J. Hawley; W. Massey, Bromley, Kent. Commended, J. Dromley, Little Bolton, Lancashire.

DRAGONS.—First, J. Percival. Second, A. Boote, Crewe. Highly Commended, Rev. H. J. Stokes, Leek; J. Percival.

MAGPIES.—First, J. Hawley. Second, H. Yardley. Highly Commended, T. Martin, Manchester.

ANTWERPS.—First and Second, J. Hawley. Commended, J. Thompson; E. Hutton, Leeds.

ARCHANGELS.—First, S. A. Taylor, Sutton Coldfield. Second and Commended, H. Yardley.

ANY OTHER VARIETY.—First and Second Extra Prize for the best pen in the Barb and subsequent classes, J. Hawley. Second, H. Draycott (German Toy). Highly Commended, H. Draycott (trillbacks) H. Yardley.

Extra Prize to the Exhibitor gaining the greatest number of prizes for Pigeons, J. Hawley.

CANARIES.

BELGIAN (Clear Yellow).—First and Extra Prize for best Clear Yellow, Buff, or Variegated Belgian, S. Bunting, Derby. Second, — Warren, Macclesfield. Highly Commended, J. Austin, Leek. Commended, — Warren; — Green, Nantwich.

BELGIAN (Clear Buff).—First, — Warren. Second, S. Bunting. Highly Commended, H. Ashton; — Warren. Commended, — Masses.

BELGIAN (Variegated).—First, — Green. Second, — Laxson, Derby.

BELGIAN (Crested).—To be judged for best crest irrespective of colour.—First and Second, — Warren. Highly Commended, H. Ashton; — Warren.

NORWICH (Clear Yellow).—First and Extra Prize for best Norwich, — Bexon. Second, — Orme. Commended, — Pierey, Hanley.

NORWICH (Clear Buff).—First, — Bexon. Second, — Orme. Highly Commended, H. Ashton. Commended, — Pierey.

NORWICH (Variegated).—First, H. Ashton. Second and Highly Commended, — Bexon.

JONQUE.—First, H. Ashton. Second, S. Bunting. Highly Commended, — Warren; — Bunting. Commended, — Orme, Derby.

GREY.—First and Extra Prize for best bird in this and the previous class, S. Bunting. Second, — Warren, Macclesfield. Very Highly Commended, H. Ashton.

PIED MULE (Yellow).—First and Extra Prize for best Pied Mule, H. Ashton. Second, — Bexon.

PIED MULE (Buff).—First, H. Ashton. Second, S. Bunting. Very Highly Commended, — Orme.

GOLDFINCH.—First, — Pierey, Northwood. Second, H. Ashton.

MULE CANARY (Buff).—Prize and Extra Prize, — Lowndes, Hanley.

LINNET (Brown).—First, — Knapper, Hanley. Second, — Perry, Hanley. Very Highly Commended, — Wardle, Hanley. Commended, — Perry; S. Bunting.

Extra Prize to the Exhibitor gaining the greatest number of Prizes for Birds. — S. Bunting, Derby.

NORWICH (Yellow, bred in the Potteries).—Prize, J. B. Piercy.

NORWICH (Buff, bred in the Potteries).—Prize, J. B. Piercy.

RABBITS.

HEAVIEST.—First, C. Gravit, Thorne. Second, W. Bedson, Northwood. Highly Commended, T. Baker, Dresden.

LONGEST EARS.—First, W. Allison, Sheffield. Second, — Millington, York. Highly Commended, — Draycot, Leicester.

ANY VARIETY (Irrespective of length of ears or weight).—First and Second, — Millington. Highly Commended, W. B. Etches, Sale; R. Wise, Huntingdon. Commended, C. Gravit, Thorne; W. Allison, Sheffield.

The Judges were for *Poultry*: Rev. G. F. Hodson, North Petherton, near Bridgewater; Mr. C. Bulpin, Riverside, Bridgewater; and Rev. T. O'Grady, Hognaston Vicarage, Ashbourne; *Pigeons*: Mr. C. Bulpin, Riverside, Bridgewater; *Cage Birds*: Mr. Barnesby, Wilmet Street, Derby; *Rabbits*: Mr. S. Johnson, Etruria.

WHITEHAVEN POULTRY SHOW.

THE number of entries at this Show, held on the 7th, 8th, and 9th inst., was scarcely so great as on some former occasions, this year amounting to between six and seven hundred pens; but the quality of the birds generally was far superior to that of former years, most of the classes being good throughout. The management of the Show and the care taken of the poultry deserve our highest praise; green food, a luxury to poultry at this time of year, and soft food, being abundantly supplied.

The show of *Cochins* was particularly good, Mr. Mapplebeck's Buffs and the White ones of Mr. Smalley being first-rate; and the classes of these varieties were throughout far better than usual. Mr. Brierley's Partridge *Cochins* were also very perfect specimens. In the *Dorking* classes the cup was awarded to a singularly large well-fathered pen of Silver-Greys. The chicken *Spanish* class was far superior to the one for adult birds, many of the old cocks having the great defect of heavily corrugated faces, rendering them entirely blind. The *Game* fowls were very superior; Messrs. Fletcher, Wetherall, Ponton, Wilson, Julian, and Weeks obtaining their well-earned laurels in a very severe competition. In *Hamboroughs* the Golden-spangled were by far the most praiseworthy. Most of the *Game Bantams* were excellent, and some well-shown *Pelkin Bantams* were most interesting to visitors. The *Chaco Turkeys*, and *Ducks* were unexceptionally good, as were the generality of the *Pigeons* throughout large classes.

OPEN CLASSES.

COCHIN-CHINA (Cinnamon or Buff).—First, H. Mapplebeck, Woodfield, Moseley, Birmingham. Second, W. A. Taylor, Manchester. Third, Messrs. Gunson & Jefferson, Whitehaven. Highly Commended, Mrs. A. Wilkin, Boodle Rectory; C. W. Brierley, Middleton, Manchester; R. White, Broomhall Park, Sheffield; G. Shrimpton, Leighton Buzzard; H. Tomlinson, Birmingham. Commended, J. Poole, Ulverston. **CHICKENS.**—First, H. Mapplebeck. Second, C. Sedgwick, Ryddlesden Hall, Keighley. Third, Col. Stuart Wortley, Grove End Road, London. Highly Commended, C. W. Brierley; Messrs. Gunson & Jefferson; H. Tomlinson. Commended, W. A. Taylor.

COCHIN-CHINA (Partridge).—First, C. W. Brierley. Second, H. Lingwood, Bucklesham, Woodbridge, Suffolk. Third, J. Shortnose, Newcastle-upon-Tyne. Highly Commended, Miss E. A. Aglionby, Hlawhead. **CHICKENS.**—First, J. A. Taylor, Manchester. Second, C. Sedgwick. Third, T. M. Derry, Gedney. Highly Commended, Messrs. Bowman & Fearon, Whitehaven.

COCHIN-CHINA (White).—First and Cup, R. Smalley, Lancaster. Second, S. Sherwen, Whitehaven. Third, Rev. F. Taylor, Kirkandrew's Rectory, Longtown. Highly Commended, Mrs. Ford, Harden Green, Balkeith; F. D. Johnson, Waterloo Street, Birmingham; Miss J. Nelson, Ecclefechan, Blackburn; R. Smalley, Gillhead, Whitehaven; J. H. Wilson, St. Bees. Commended, W. F. Dixon, Gillhead, Whitehaven. **PALLETS.**—First, C. W. Brierley. Second, C. Sedgwick. Third, J. K. Fowler, Aylesbury. Highly Commended, A. H. Ventry, Northenden; Messrs. Gunson & Jefferson; Messrs. Bowman & Fearon; J. Poole.

BRAMMA FOOT.—First, W. Hargreaves, Bacup. Second, H. Lacy, Hobden Bridge. Third, Miss Aglionby. Highly Commended, K. Jopp, Aberdeen. **CHICKENS.**—First, H. Lacy. Second, R. White. Third, K. Jopp. Highly Commended, W. Hargreaves, Col. Stuart Wortley. Commended, Messrs. Bowman & Fearon. **PALLETS.**—First, G. Dixon, jun., Whitehaven. Second, Messrs. Bowman & Fearon. Third, W. Hargreaves. **DORINGS (Silver-Grey).**—First, R. D. Holt, Orsett Head, Windermer. Second, Miss Milne, Otterburn, Kelso. Third and Highly Commended, R. Smalley.

DORINGS (Any other variety).—First, J. White, Warlaby, Northallerton. Second, Messrs. Gunson & Jefferson. Third, W. W. Rutledge, Shortend, Kendal. **CHICKENS.**—First, R. Smalley. Second, T. Rogers, St. Helen's, Lancashire. Third, J. Parlett, Huntingdon. Highly Commended, J. Fox, St. Bees; D. Gellatly, Meiride; Messrs. Gunson & Jefferson. Commended, J. White. **PALLETS.**—First, T. Rogers. Second, J. Fox. Third, R. Smalley. Highly Commended, J. White; Messrs. Gunson & Jefferson. Commended, D. Hardie, Langholm.

SPANISH.—First, Miss Nelson. Second, J. Thresh, Bradford. Third, Messrs. Burch & Boulter, Sheffield. **CHICKENS.**—First, Miss Sidpath, Edinburgh. Second, Messrs. Bowman & Fearon. Third, J. Leeming, Broughton, Preston. **PALLETS.**—First and Cup, Miss Sidpath. Second, J. Wilson. Third, Messrs. Burch & Boulter. Highly Commended, J. Newton, Salsdon, Leeds; E. Brown, Sheffield.

FRENCH.—First and Third, Mrs. Wilkin, Boodle. Second, Messrs. Gunson & Jefferson. Highly Commended, E. Brown. Commended, J. K. Fowler.

GAME (Any description).—Cock.—Cup, First, and Third, J. Fletcher,

Stoneclough, Manchester. Second, Capt. Wetherall, Lodington, Kettering. Highly Commended, J. H. Wilson; J. Brough. *Cockerel.*—First and Cup, W. Boulton, Dalton-in-Furness. Second, J. Fletcher. Third, J. Gelderd, Kendal. Highly Commended, J. Poole. Commended, Capt. Wetherall; Mrs. Parker, Coalstaith, Brampton; J. Barrow, jun., Kendal. *Game (Black-breasted and other Reds).*—First and Cup, J. H. Wilson. Second, J. Fletcher. Third, W. Boulton. Highly Commended, R. Pickering, Carlisle; J. Barrow, jun.

GAME (Any other variety).—First, H. M. Julian, Hall. Second, J. Fletcher. Third, J. Brough. **PALLETS.**—First, J. Weeks, Boodle. Second, D. Gellatly. Third, J. H. Wilson. Commended, T. Mason, Green Ayre, Lancaster; D. Hardie.

HAMBOURG (Golden-spangled).—First and Cup, H. Pickles, jun., Earsby. Second, H. Beldon, Bingley. Third, E. Brierley, Heywood. Highly Commended, N. Marlor, Denton. Commended, J. Osdon, Hollingwood.

HAMBOURG (Silver-spangled).—First, H. Beldon. Second, H. Pickles, jun. Third, J. Fielding, Newchurch. Highly Commended, J. Smalley; J. Walker, Knaresborough. Commended, Messrs. S. & R. Ashton, Mottram.

HAMBOURG (Golden-pencilled).—First, H. Pickles, jun. Second, W. Bowe, Carlisle. Third, S. Smith, Northwram. Highly Commended, H. Beldon; T. Wrigley, jun., Tonge, Middleton; R. Burrows.

HAMBOURG (Silver-pencilled).—First, J. Preston, Altherton. Second, H. Beldon. Third, J. Walker.

HAMBOURG (Any variety).—*PALLETS.*—First, H. Beldon. Second, J. Ogden. Third, Messrs. Bowman & Fearon. Highly Commended, H. Pickles, jun.; R. Burrow.

ANY VARIETY NOT NAMED.—First, H. Beldon (Poland). Second, G. W. Boodley, Louth. Third, Mrs. Wilkin (Buff Poland). Commended, R. H. Nicholas, Newport, Monmouth.

SELLING CLASSES.—First, Messrs. Gunson & Jefferson. Second, J. Thompson, Bingley (Spanish). Third, J. Hinton, Boothstown Bridge, Manchester (Game Bantams). Highly Commended, Messrs. Gunson & Jefferson; Miss Spedding, Whitehaven; J. R. Robinson, Smeddall (Bantams); J. Cowman, Whitehaven (Douch Ducks); J. H. Wilson (White Cochins). Commended, Messrs. Bowman & Fearon; Miss Spedding; R. Smalley; J. Smith, Keighley (Black Spanish); G. Lell, Wigton (Game); J. White (Grey Dorkings); J. Hartley, Beckermott; — Irwin, Whitehaven (Polands); W. F. Dixon, Gillhead.

GAME BANTAMS.—First and Cup, W. Greaves, Bradford. Second, W. Parker, Clay Cross. Third, J. Parlett. Highly Commended, J. Oates, Stoney Road, Halifax; J. R. Robinson. Commended, S. Sherwen, Whitehaven; J. Parlett; G. Maples, Waverley, Liverpool. *Cock.*—First, W. A. Taylor, Manchester. Second, W. Boulton. Third, C. W. Brierley. Highly Commended, R. J. Wood; J. R. Robinson; J. Poole. Commended, W. Hudson, Rochdale; J. W. Morris, Darlington.

BANTAMS (Any variety).—First, T. Burgess, Brighouse. Second, W. A. Taylor. Third, J. R. Jessop, Hull. Highly Commended, Messrs. S. & R. Ashton; W. J. Cope, Barnsley; A. K. Briggs, Bradford. Commended, T. C. Harrison, Hull; W. A. Taylor; G. Maples.

DREKS (White Aylebury).—First and Cup, J. K. Fowler. Second, W. Pares, Ockbrook, Derby. Third, Messrs. Bowman & Fearon. Highly Commended, Lady J. Lindsay, Manchester Castle. Commended, D. Hardie.

DREKS (Bouen).—First, D. Hardie. Second, J. K. Fowler. Third, A. Dickinson, Whitehaven. Highly Commended, S. B. Stott, Rochdale; T. Honker, Revdize, Blackburn; E. G. Jones, Parton; Messrs. Gunson & Jefferson. Highly Commended, Rev. F. Taylor; J. J. Waller, Kendal.

DREKS (Any other variety).—First, T. C. Harrison. Second, C. W. Brierley. Highly Commended, H. Beldon.

GEES.—First, J. K. Fowler. Second, Messrs. Gunson & Jefferson. Third, Mrs. Birkett, Worlington. Highly Commended, J. Turner, Whitehaven.

TERKEYS.—First, Miss Borthwick, Flinaby. Second, J. Cowman. Third, J. Fox.

LOCAL CLASSES.

DORINGS.—Cock.—First and Cup, A. Thompson, Whitehaven. Second, J. Stirling, Bridgekirk, Co. Durham. Third, Messrs. Gunson & Jefferson. Highly Commended, J. Stirling; J. Fox; Messrs. Gunson & Jefferson. *Hen or Pullet.*—First, J. H. Wilson. Second, Messrs. Gunson & Jefferson. Third, J. Fox. Highly Commended, A. Thompson; J. Robertson, H. Harrook, Whitehaven.

COCHINS OR BRAMMAS.—Cock.—First and Cup, G. S. Dalzell, Whitehaven. Second, Miss Spedding, Whitehaven. Third, Messrs. Gunson & Jefferson. Highly Commended, Messrs. Bowman & Fearon; J. Robertson; Messrs. Gunson & Jefferson. Commended, G. Dixon. *Hens or PALLETS.*—First, Messrs. Gunson & Jefferson. Second, J. Richards. n. Third, W. Burnycat, jun., Corkiele. Highly Commended, Messrs. Gunson & Jefferson; W. Burnycat, Whitehaven; H. B. Lindsay, Manchester Castle. Commended, Mrs. Wilkin; G. S. Dalzell.

SPANISH.—Cock.—First and Cup, J. H. Wilson. Second, J. Hartley, Beckermott. Third, Messrs. Bowman & Fearon. *Hen or Pallet.*—First and Third, J. H. Wilson. Second, Messrs. Bowman & Fearon. Third, J. H. Wilson.

GAME.—Cock.—First and Cup, J. Brough, Ellenberha-st. Second, Messrs. Bowman & Fearon. Third, J. H. Wilson. Highly Commended, Jefferson Brough; J. H. Wilson. Commended, C. Fisher, Whitehaven. *Cockerel.*—First and Cup, J. H. Wilson. Second, Jefferson Brough. Third, J. Mitchell, Egremont. Highly Commended, J. H. Wilson. *Hens or PALLETS.*—First, J. Weeks, Boodle. Second, C. Fisher. Third, J. H. Wilson. Commended, Messrs. Bowman & Fearon.

HAMBOURG.—Cock.—First and Cup, E. G. Jones. Second, A. Briggs. Third, Messrs. Bowman & Fearon. Highly Commended, Messrs. Bowman & Fearon; J. Moore, Mireside. Commended, H. J. Nelson, Holborn Hill, Cumberland. *Hen or Pallet.*—First, J. H. Wilson. Second, H. J. Nicholson. Third, A. Briggs. Commended, Rev. H. Fox, St. Bees.

BANTAMS.—Cock.—First and Cup, J. Weeks. Second, Miss Spedding. Third, G. S. Dalzell. Highly Commended, Messrs. Bowman & Fearon; S. Sherwen. *Hen or Pallet.*—First, Miss Spedding. Second, J. Weeks. Third, Messrs. Bowman & Fearon.

DREKS.—First and Cup, Messrs. Bowman & Fearon. Second, Messrs. Gunson & Jefferson. Third, A. Dickinson. Highly Commended, C. Fisher; J. Cowman; E. G. Jones.

PIGEONS.

CARRIERS.—Cock.—First, R. H. Artindale, West Derby, Liverpool. Second, G. H. Roberts, Penwortham, Preston. Highly Commended, R. H. Artindale; H. Yardley, Birmingham. *Hen.*—First, G. H. Roberts. Second,

cond, F. Else, Westbourne Grove, London. Highly Commended, H. Yardley.

POUTERS.—*Cocks*.—First and Second, C. Cowburn, Calls, Leeds. Highly Commended, H. Yardley. *Hens*.—First and Second, J. Hawley, Bingley.

TUMBLERS (Almond).—First, J. Hawley. Second, F. Key, Beverley. Highly Commended, C. Cowburn.

TUMBLERS (Any other variety).—First, J. Hawley. Second, R. Whittaker, Bolton. Highly Commended, C. Cowburn.

JACOBS.—First, J. Hawley. Second, R. Thompson, Moresdale Hall, Kendal. Highly Commended, J. Thompson, Bingley; J. Towerson, Whitehaven.

TRUMPETERS.—First, J. Hawley. Second, J. Thackray, York. Commended, J. Thompson.

BABES.—First, G. H. Roberts. Second, J. Thompson. Highly Commended, T. Newall, Ashton-under-Lyne.

TURBITS.—First, J. Thompson. Second, R. Thompson. Highly Commended, H. Yardley.

HEELS.—First, H. Yardley. Second, J. Towerson.

FANTAILS.—First, J. Thompson. Second and Commended, H. Yardley.

ANY OTHER NEW OR DISTINCT VARIETY.—First, J. Hawley (Blue Priests). Second and Third, H. Yardley. Highly Commended, J. Thompson; J. Thresh (Ruff-footed Dutch Rollers).

SELLING CLASS (Any variety).—First, F. Key. Second, J. Thompson. Highly Commended, J. R. Jessop (Pouters); J. Hawley; G. Birkett, Whitehaven.

ANY VARIETY (Three pairs to be shown together).—First and Second, J. Towerson.

CANARIES.

BEIGIAN BUFF.—First, J. Thompson. Second, R. Hawman, Middlesbrough-on-Tees. Highly Commended, J. Williamson, Ulverston.

MCLE (Yellow).—First, Withheld. Second, J. Tyson, Frizington.

MCLE (Buff).—First, R. Hawman. Second, J. Thompson.

PIEBALDS.—First, J. Boulton, Ulverston. Second, R. Hawman. Commended, J. King, Frizington.

LIZARDS.—First, J. Hawman. Second, Capt. Donaldson, Whitehaven. Commended, J. Thompson.

RABBITS.

LOP-EARED.—First and Third, Messrs. Bowman & Fyson. Second, Miss E. H. Johnson, Carlisle. Highly Commended, Miss A. Barker, Bolton Hall, G.forth.

ANY OTHER VARIETY.—First and Second, Miss A. Barker.

The Geese, Turkeys, Ducks, and Pigeons were judged by Mr. R. Pickering, of Carlisle; and the rest of the classes by Mr. E. Hewitt, of Birmingham, and Mr. R. Tebbay, of Preston.

SELKIRK POULTRY SHOW.

The fifth Show of the Selkirkshire Society was held in the Volunteer Hall, Selkirk, January 8th and 9th, when the following awards were made by the Judges, James Dickson, Esq., North Park, Bradford; and J. Walker, Esq., Inverlathbrugh.

SPANISH.—First, D. Waugh, Melrose. Second, Miss F. Ridpath, Edinburgh. Third, W. Paterson, Langholm.

DORKINGS (Coloured).—First and Highly Commended, L. & J. Binning, Melrose. Second, G. H. Plummer, D. Keith. Third, W. Snowie, Philiphaugh. Commended, J. Simson, Fifehead; W. Fairbairn, Whitburn; Miss M. Brown, Philiphaugh.

COCHIN-CHINA.—First, Major Dickson, Midstream. Second, J. Stewart, Tulliebank, Dumbarton. Third, W. R. Park, Abbotsmills, Leith. Highly Commended, W. R. Park; J. Shattock, Newcastle.

BRAMA POULTRY.—First, J. Stewart. Second, W. R. Park. Third, G. H. Plummer. Highly Commended, D. Murray, Selkirk. Commended, J. Waugh, Selkirk.

HAMPSHIRE (Golden-pencilled).—First and Third, W. R. Park. Second, W. Bowe, Carlisle. Highly Commended, W. Scott, Galashiels; G. Walker, Selkirk.

HAMPSHIRE (Silver-pencilled).—First, J. Preston, Allertoun, Bradford. Second, W. R. Park. Third, G. Walker. Commended, W. Laurens, Yarm.

HAMPSHIRE (Golden-spangled).—First, A. Heald, Selkirk. Second, J. Preston. Third, R. Dickson, Selkirk. Highly Commended, J. Ness, Kirkcaldy. Commended, R. Dickson; E. Currie, Ayr.

HAMPSHIRE (Silver-spangled).—First, W. R. Park. Second, W. Bowe. Third, W. France, Crieff. Commended, J. C. Noble, Dundee.

GAME (Black or Brown Red).—First, D. Hardie, 57, Eves Lang, Inn. Second, H. M. Julian, Hull. Third, W. Kiddle, Newtown. Highly Commended, H. Goodall, Kirkcaldy. Commended, W. Brown, Selkirk; Lord Binning.

GAME (Any other variety).—First, H. Goodall. Second, T. Davidson, Third, H. M. Julian.

GAME BANTAMS (Black or Brown Red).—First and Third, W. Mahon, Jedburgh. Second, W. Hodgson, Darlington. Highly Commended, J. Roberts, Dunfermline. Selkirk; Miss Tait, Heatherlie, Selkirk; W. Scott, Jedburgh Black Red; J. Hardie.

GAME BANTAMS (Any other variety).—First, W. Mahon. Second, W. Scott (Pheas). Third, T. Stoddart, Selkirk.

BANTAMS (Any variety except Game).—First, F. L. Roy (Silver-faced Sebright). Second and Third, Lord Binning (Sebright).

DUCKS (White Aylesbury).—First, Sir J. Murray, Bart., Philiphaugh. Second, D. Hardie. Third, J. S. E. Fair, Overwell, Jedburgh. Highly Commended, G. D. Dryden. Commended, A. Hoggar, B. Mollet, Leshe, Fifehead; Lord Binning.

DUCKS (Brown).—First, D. Hardie. Second, W. Edgar, Dundalehaugh, Selkirk. Third, Mrs. Annie, Woll.

TURKEYS.—First, T. L. Jackson, Bush of Eves, Cambridge. Second and Third, Lord Binning (Cambridge). Commended, Mrs. Annie, American.

COTTAGE CLASS (Any variety).—First, W. Miller (Dorkings). Second, G. Turnbull, Dundalehaugh, Selkirk. Third, J. Graham (Golden-spangled). Highly Commended, J. Judge, Selkirk (Silver-spangled); R. Edgar (Silver-pencilled); J. Gardiner (Brown Red Game); W. Miller (Dorkings); W. Inglis, Selkirk. Commended, A. Heald, Ayr (Gold-spangled); W. Edgar, Heatherlie (Brown Red Game); J. Taylor, Selkirk (Golden-pencilled).

SELLING CLASS.—First, T. L. Jackson (Dorkings). Second, T. Musgrave, Third, W. Edgar (Rosen Ducks). Highly Commended, W. Linton, (Brahma Pouter); J. Musgrave, Longtown; F. L. Roy, Nenthorn (Duckwing Game); W. Turnbull (Golden-spangled). Commended, G. Walker (Silver-pencilled); W. Tait (Brown Red); F. L. Roy (Black Red).

SWEETFARE FOR BANTAM COCK.—First, J. L. Brown, Selkirk. Second, W. Mahon. Third, F. L. Roy (Duckwing). Highly Commended, W. Scott; W. Easton.

PIGEONS.

TUMBLERS (Short-faced).—Prize, J. E. Spence, Musselburgh. **TUMBLERS** (Any other variety except Short-faced).—First, J. Bell, Newcastle-on-Tyne. Second, J. Simson. Equal Second, J. Ballantyne, Selkirk.

FANTAILS.—First, W. R. Park. Second, W. Cheyne, Selkirk. Highly Commended, J. Grant.

POUTERS.—First, J. Bell. Second, J. Grant. Very Highly Commended, J. Grant. Highly Commended, J. Simson; W. Cheyne; K. Paterson.

JACOBS.—First, R. Paterson. Second, R. Davidson. Highly Commended, J. Spencer, J. Bell.

SCOTS.—First, J. Davidson. Second, R. Paterson. Highly Commended, R. Paterson; F. L. Roy. Commended, W. Cheyne.

GRAYS.—First, R. Paterson. Second, W. R. Park. Highly Commended, T. Spence; W. R. Park. Commended, J. Bell.

TRUMPETERS.—First, R. Paterson. Second, W. Cheyne. Commended, T. Little, Selkirk; W. R. Park.

ANY OTHER VARIETY.—First, J. Bell. Second, W. Cheyne. Highly Commended, W. Cheyne.

SELLING CLASS.—First, W. R. Park (Fantails). Second, R. Paterson (Jacobin). Third, J. Grant (Pouters).

NORTHERN POULTRY CLUBS SHOW.

The Exhibition of Poultry and Pigeons was held on the 1st and 2nd of January in the Artillery Gymnasium, Queen Street, Aberdeen. The Show on the whole was admitted to be the best ever held in Aberdeen, or the North of Scotland. The entries for Poultry and Pigeons amounted in all to 500, including competitors from all parts of England and Scotland.

The *Cochins* were considered very good, both in numbers and quality. Mr. Anderson's cockerel and pullet, which gained the first prize in the cup, were very superior. Mr. Pashley's birds, which only, however, arrived the second day of the Show, would have pressed very hard for the highest honors. The *Spanish* fowls were in fair feather and on the whole remarkably good; those exhibited by Mr. Ridpath, of Edinburgh, were especially so. *Dorkings* were a strong class, and, although most of the other breeds were short in feather, there were many very good pens; and the coloured birds were excellent. *Cochins* were a fair class, the single cock which gained the cup being a very fine bird, pecking the best in the show. We think the only error in judgment was in the *Cochin* cockerel and pullet class, a very fine pen of Mr. Stuart's, of Glasgow, being passed over without even a notice. The *Brahmas*, however, were the great feature of the Show, being numerous and of admirable quality. The birds shown by Mr. Jopp, who won the cup, were the best we have ever seen exhibited. *French Fowls* were shown in considerable numbers, the most of the prizes falling to B. C. Urquhart, Esq., of Midburn, who exhibited some very fine specimens of *Houdans* and *Croco-Corps*. *Hens* were a slow of themselves, ninety-one pens being exhibited; the cup in this class was won by a very fine pen of *Silver-spangled* *Hens* belonging to Mr. Beldon. In the class for Any other variety, with the exception of Mr. Beldon's first-prize pen, the birds were poor in quality. *Bantams* were a poor show; exception must, however, be made of the single Game Bantam cock belonging to Mr. Anderson, of Melde, which was a very fine bird.

Ducks were a good and very good, the first-prize gander being the best bird we have seen exhibited this season.

The show of *Pigeons* was not equal in point of numbers to former shows here, but the quality of the birds was superior. The classes of *Pigeons* were remarkably well represented, especially the *Blues* and the *White*; the latter in Mr. McE's medal pair (and which beat the first-prize pair at the Glasgow Show), amongst the former, deserves special notice. The *Cocks* were on the whole fair, Mr. Fulton's *Dun* cock which was first, and Mr. McGee's *Black* hen, were the finest specimens of their kind ever shown here. The *Fantails* were very numerous and good. *Bantams* were a fine class, and the others were all of fair merit.

The arrangements of the Show were of the most complete and satisfactory character, and reflected much credit on the Committee and Secretary.

GAME (Any colour).—*Cocks*.—First, T. Watson, Crieff. Second, G. Howie, Ewe House, Bairs. Third, J. Anderson, Ruthven House, Meigle. N.B. *Hens*.—First, J. Anderson. Second, W. Hay. Third, J. M'Pherson. *Cochins*.—First and Cup, J. Anderson. Second, W. Roberts, Thornhill, near Burnley. Third, W. Tait, Heatherlie, Selkirk. Commended, J. M'Pherson; S. Smith, Crieff.

SPANISH.—*Cocks*.—First, Messrs. Brown & Cochrane, Perth. Second, J. Ferrier, Woodside. Third, T. Knowles. *Hens*.—First, A. Ridpath, Edinburgh. Second, S. Mitchell, Golden Place, Aberdeen. Third, W. Hay. Highly Commended, W. McE; Messrs. Brown & Cochrane. *Chickens*.—Cup, F. James, Peckham Rise. Second, A. Ridpath. Third, W. McE. Highly Commended, S. Mitchell.

DORKING (Silver-Grey).—*Cocks*.—First, W. McE. Second, T. Knowles, Jun. Third, A. G. Pirie, Stoneywood, near Aberdeen. *Hens*.—First, W. McE. Second, T. James, Bridge Haugh, Stirling. Third, A. Farquhar, Elrick. Highly Commended, A. F. Williamson, Gasliehen Mains, Blackburn. Aberdeen; J. Gordon, Inverurie. *Chickens*.—First, W. McE. Second, T. James. Third, J. Milne, Radio House.

DORKING (Any other colour).—*Cock*.—First, J. Gordon. Second, T. Knowles, jun. Third, D. Gellatly, Migle. *Hens*.—First and Cup, J. Gordon. Second, W. McE. Third, D. Gellatly. *Chickens*.—First, J. Anderson. Second, T. Raines. Third, J. Gordon. Highly Commended, J. Clark, Forchabers.

COCHIN-CHINA (Any colour).—*Cock*.—Cup, G. Murray, Aberdeen. Second, B. C. Urquhart, Meldrum. Highly Commended, J. Young, Aberdeen. *Hens*.—First, Mrs. Carnegie, Redbank, Fordoun. Second and Third, G. Murray. *Chickens*.—First and Second, G. Murray. Third, L. Crick-shank, Old Meldrum.

BRAHMA POOTRA (Any colour).—*Cock*.—Cup and Second, K. Jopp, Aberdeen. Third, C. B. Fisher. Commended, Mrs. Farquharson, Inveraild; Mrs. Stronach, Sunnybank, Aberdeen. *Hens*.—First, J. Stuart, Thistlebank, Helensburgh. Second, K. Jopp. Third, F. W. G. Gray, Aberdeen. Highly Commended, T. Raines; K. Jopp; J. Chalmers, Granton Lodge. *Chickens*.—First, Second, and Third, K. Jopp. Highly Commended, Mrs. A. Fisher.

HOUDAN, CRIVE-CEUR, OR LA FLICHE.—*Cock*.—First and Third, R. C. Urquhart. Second, R. O. Farquharson, Haughton, Alford. Highly Commended, F. W. G. Gray. *Hens*.—First and Second, B. C. Urquhart. Third, R. O. Farquharson.

HAMPSHIRE (Gold or Silver-pencilled).—*Cock*.—First, J. D. Stone, Second, J. Still, Spittal. Third, R. McGregor, Perth. Highly Commended, D. Normand; B. C. Urquhart; H. Pickles, jun., Early. Commended, D. Normand. *Hens*.—First, H. Pickles, jun. Second, J. Hay, jun., Aberdeen. Third, J. Bowe, Carlisle. Highly Commended, R. McGregor; D. Normand.

HAMPSHIRE (Golden-spangled).—*Cock*.—First, P. Campbell, Oldwhat, New Deer. Second, Mrs. Farquharson. Third, H. Pickles, jun. Highly Commended, D. Walker, Aberdeen; H. Beldon, Goitstock, Bingley; T. Mushgrove, Longton, Carlisle. *Hens*.—First, H. Pickles, jun. Second, J. F. Loverside, Newark. Third, Mrs. Farquharson. Highly Commended, Mrs. Brown, Abercainny, Crieff; H. Beldon.

HAMPSHIRE (Silver-spangled).—*Cock*.—First, W. France, jun., Crieff. Second, J. Hay, jun. Third, H. Pickles. Highly Commended, H. Beldon. *Hens*.—Cup, H. Beldon. Second, H. Pickles, jun. Third, J. Hargreaves, Carlisle. Highly Commended, W. France, jun.

ANY OTHER VARIETY.—First, H. Beldon. Second, W. McIntosh, Balmagask, Nigg.

GAME BANTAMS (Any colour).—*Cock*.—First, J. Anderson. Second, J. J. Consins, Allerton, near Leeds. Third, G. Robertson, Aberdeen.

GAME BANTAMS (Any colour).—First, R. Macgregor. Second, J. Anderson. Third, G. Dalgarno, Strathgill, Aberdeen. Highly Commended, P. Campbell.

BANTAMS (Any other variety).—First, T. Watson, Crick. Second, H. T. Paterson, Kenfield, Aberdeen. Third, M. W. H. Peple, Perth.

DUCKS (Any variety).—First, J. Anderson. Second and Third, Mrs. Stronach. Highly Commended, A. Haggart, Leslie.

DUCKS (Any other variety).—First, J. Anderson. Second, Mrs. Carnegie. Third, D. Gellatly. Highly Commended, A. Farquhar.

TURKEYS.—First and Second, Mrs. Carnegie. Third, Mrs. Stronach.

GESE.—First, Mrs. Carnegie. Second, B. C. Urquhart. Third, A. Farquhar.

SELLING CLASS.—First, T. Knowles, jun. Second, P. Campbell. Third, B. C. Urquhart. Highly Commended, W. Pyper, Bellshiel; T. Macgregor.

PIGEONS.

POUTERS (White).—First, R. Fulton, Duffield, London. Second, F. McCrae, Aberdeen. (Blue).—Medal, W. McE. Aberdeen. Second, R. Fulton. (Any other colour).—First, R. Fulton. Second, J. Sharp, J. B. Stone.

CARRIERS.—Medal, W. McE. Second, R. Gunn, Dundee.

POUTERS (White).—*Cock*.—First, R. Fulton. Second, W. McE. *Hens*.—First, J. Grant, Corstorphine, Edinburgh. Second, W. McE.

POUTERS (Blue or Black).—*Cock*.—First, R. Fulton. Second, J. Grant. *Hens*.—First, R. Fulton. Second, W. McE.

POUTERS (Any colour).—First, R. Fulton. Second, J. Grant. *Hens*.—First, J. Grant. Second, R. Fulton.

CARRIERS (Any colour).—*Cock*.—First, R. Fulton. Second, F. McCrae. *Hens*.—First, R. Fulton. Second, F. McCrae.

TUMBLERS (Almond).—First, R. Fulton. Second, J. Baillie, Bellevue, Aberdeen.

TUMBLERS (Any other colour).—First, R. Fulton. Second, J. Grant.

FANTAILS (Any colour).—First, J. Grant. Second, J. Rae. Third, J. Baillie. Highly Commended, J. Sharp.

JACOBINS (Any colour).—First, J. Baillie. Second, E. E. M. Boyd, Greenhill, Rochdale.

BARBS (Any colour).—First, W. McE. Second, R. Fulton.

TRUMPETERS (Any colour).—First, J. Grant. Second, J. Baillie.

TURBITS (Any colour).—First, J. Bell, Newcastle-on-Tyne. Second, J. Simpson, Bright n, Durris.

OWLS (Any colour).—First, J. Bell. Second, J. Sharp.

DRAGONS (Any colour).—First, J. Bell. Second, J. Sharp.

NUNS OR MAGPIES (Any colour).—First, J. Sharp. Second, J. Baillie.

ANY OTHER VARIETY (Any colour).—First, J. Sharp. Second, A. Cowie, Crambleybank, Ellon.

The Judges were, for *Pouter*, Mr. T. Challenor, Barlborough, Chesterfield; and Mr. John Martin, Linton Park, Staplehurst, Kent.

For *Pigeons*, Mr. J. H. Frame, Overton, Carlisle.

FIFE AND KINROSS ORNITHOLOGICAL SOCIETY'S EXHIBITION

THE annual Exhibition of the Fife and Kinross Ornithological Society was held in the Corn Exchange, Kirkcaldy. The number of specimens far exceeded that shown in any former year, and many of them were of very high merit. The Poultry consisted of upwards of 250 pairs. There were nearly fifty cages of Pigeons, and 141 specimens of Canaries. The prizetakers were:—

SINGLE COCKS (Any variety).—*Game*.—First, H. Goddall, Kirkcaldy. Second, A. Penman, Kelty. Third, H. Lawrie, Markinch. *Dorking*.—First, T. Raines, Bridge Ham, Stirling. Second, D. Gellatly, Melrose. Third, D. Normand, Kennoway. Highly Commended, J. L. Gow, Birtley.

Hon. Miss E. de Flahault. *Cochin*.—First, W. Morris, Aberdeen. Second, W. B. Park, Melrose. Third, Mrs. Oswald, Dornkirk. *Brahma*.—First, J. Macmillan, Edinburgh. Second, D. Gellatly. Third, J. I. Loverside, Newburgh-Trent. *Hampshire*.—First, A. Pratt, Kirkcaldy. Second, R. Thomson, Muttonhall, Kirkcaldy. Third, R. Stewart, Kelty. Highly Commended, A. W. Lenthall, Leslie. *Bantam*.—First, J. H. Gray, Jedburgh. Second, Hon. Miss E. de Flahault. Third, D. Talbot. Highly Commended, Mrs. Oswald.

GAME (Red).—First, A. Drummond, Glasgow. Second, G. Jamieson, Forfar. Third, Withheld. *Chickens*.—First, G. Mustard, Airth. Second, R. Stewart, Kelty. Third, D. Hard, Cluny.

GAME (Gray and other).—First, H. Goddall. Second, T. Baird, Bankhead, Kirkcaldy. Third, L. Clifton. Kirkcaldy. *Chickens*.—First, H. Goddall. Second, D. Pennington, Dysart. Third, J. Pennington, Dysart.

DORKING.—First, Hon. Miss E. de Flahault. Second, D. Talbot, Dundee. Third, D. Gellatly. *Chickens*.—First, T. Raines. Second and Third, Hon. Miss E. de Flahault.

COCHIN (Any variety).—First and Second, Mrs. Oswald. Third, W. R. Park.

BRAHMA POOTRA.—First, T. Raines, Stirling. Second, withd. Third, Hon. Mrs. Montgomery, Bankhead, Cupar-Fife.

SPANISH.—First, J. Macmillan. Second, J. Craig, Forfar. Third, A. Robertson, Burntisland.

HAMPSHIRE (Spangled).—First, W. Kiddle, Cowdenbeath. Second, H. Goddall. Third, R. Stewart, Kelty. Highly Commended, A. Penman.

HAMPSHIRE (Pencilled).—First, R. McGregor, Perth. Second, R. Thomson. Third, A. Pratt. Highly Commended, D. Normand.

GAME BANTAM (Any variety).—First, Hon. Miss E. de Flahault. Second, Mrs. Henderson. Third, A. Robertson.

BANTAM (except Game).—First, J. Rutherford, Neckenzie, Auchtermuchty. Second, D. Brown. Third, G. W. Borthwick, Leath, Lincolnshire.

ANY OTHER BRED.—First and Second, Hon. Miss E. de Flahault. Third, J. L. Gow, Perth.

DUCKS.—First, A. Haggart, Leslie. Second, A. Couper. Third, B. Mollett.

SELLING CLASS (Any breed).—First and Second, H. Goddall. Third, D. Normand.

CORN POULTRY SHOW.

THE eighth Exhibition of the South of Ireland Poultry, Pigeon, Cage and Song Bird Association was held in the Athenaeum on the 4th inst., and, so far as the preceding Shows of this useful Society have been concerned, it was the essential of quality, variety, and number. The pure birds were noble pairs. The *Pigeon* department, always very full, was even more numerously represented than at any previous Show. The song bird department included Canaries, Linnets, Blackbirds, Thrushes, Nightingales, Larks, Finches, &c., a collection as beautiful as it was interesting.

The chief attraction of the Exhibition was the splendid collection of birds exhibited by Mr. Carlott, of Castleconnell. This gentleman, whose well stocked aviaries are so well known among connoisseurs, had a selection including three Golden Eagles—magnificent birds—White Pheasants, Golden Pheasants—exceedingly beautiful birds, Kalage, Silver, Bohemian, Chinese, Pied, Hybrid, and Common Pheasants, all superb specimens of their several classes, besides a noble pair of Black Australian Swans, a pair of Japanese Pua fowl, a number of Peregrine Falcons, with hoods and bells; a Goshawk, an Iceland Falcon, a Virginian Owl, a trained Cormorant, a laughing Kingfisher, and a number of Blue, Red, and Yellow Macaws, Cockatoos, Parrots, Parakeets, &c. Among the Cockatoos was one remarkable bird, sombre and sage as Poe's raven, but of snowy whiteness, who sat thoughtfully on the high perch in the hall, at intervals putting a series of peremptory inquiries to his keepers. This remarkable bird was had by Mr. Corbett, twenty years ago in this city, from Mr. Henry Keating, who stated the bird was then close on thirty years old, so that the feathered patriarch must have seen a full half-century, and was yet hale and talkative enough to see many another year. The Goshawk, a fine bird, hooded and belled, and, with an atmosphere of chivalry and tournament about him, was presented to Mr. Corbett by a hawking noble in Paris, and had all the graces of his species, his owner frequently killing rabbits with him. Mr. Corbett offered nothing for competition.

The arrangements of the Show were capital, and among not the least attractive features of the Exhibition were the unique cages in which the song birds were caged, some of these being remarkably attractive in appearance and design. The following is the prize list:—

SPANISH.—First, A. Cowie, Ellon. Second, R. P. Williams, Comrie, and A. C. Cooper, Glasgow. First, Miss D. Conroy-Drew, Seafield, A.C. myn, jun. Highly Commended, Miss De Courcy-Drew.

DORKING.—Cock. First and Second, R. P. Williams. Third, E. Pike.

DORKING (Spang-Gow).—First and Second, Mrs. Warburton. Third, A. E. Lush. Highly Commended, Mrs. Warrington. Commended, Mrs. Warburton; T. O'Grady; Miss A. E. Pike; F. Haddon.

DORKING (White).—First, J. C. Perry. Second and Commended, Countess of Dundee.

COCHIN (Duff or Lark).—First, F. W. Curthorpe. Second, Mrs. Hay. Third, R. W. Doyle. Commended, H. L. Tivy.

COCHIN (Partridge).—Game. First, F. C. Cooper. Second, C. F. Johnston (Partridge). Commended, R. P. Williams.

COCHIN (Lark).—First, F. W. Curthorpe; Miss S. L. Pike; H. L. Tivy. Second, A. W. Shaw.

GAME (Black or Brown).—First, T. H. Marshall, Birtley. Second, R. Clive, Comrie, J. C. Cooper.

GAME (Duckwing or other variety).—First, T. H. Marshall, Birtley. Second, A. E. Allen (Duckwing). Third, N. W. Roche, Duff, Fife.

BRAHMA POOTRA.—First, T. Haddon. Second, Mrs. Warburton.

Third, A. W. Shaw (Light). Highly Commended, R. W. Boyle (Dark).
 Commended, A. W. Shaw (Light); Mrs. Dring.
CRÈVE CŒURS.—First and Cup, J. C. Fitzgerald. Second, J. C. Cooper.
HOUDEANS.—First, J. C. Cooper. Second, A. W. Shaw. Third and Highly Commended, F. W. Pim.
LA FLECHE.—First, A. W. Shaw. Second, J. C. Cooper. Commended, C. Langley; J. C. Cooper; C. F. Staunton.
POLANDS (White-crested).—First and Second, Miss De Courcy Drexler. Highly Commended, J. C. Cooper. Commended, R. P. Williams.
POLANDS (Spangled).—First, J. C. Cooper. Second, F. W. Pim (Silver). Highly Commended, Mrs. Dring (Gold); J. C. Cooper; R. P. Williams (Gold). Commended, Mrs. Dring; R. P. Williams.
HAMELINGS (Spangled).—First, J. C. Cooper. Second, R. P. Williams (Silver, double-crested). Commended, Countess of Bandon.
HAMBURGERS (Pencilled).—First, C. F. Staunton (Gold). Second, A. Murray, jun. (Gold-pencilled). Highly Commended, J. C. Perry (Gold); T. O'Grady.
GAME BANTAMS.—First, J. C. Cooper. Second, N. W. Roche (Duckwing). Highly Commended, J. Jeffries (Black Red); N. W. Roche (Black Red); A. E. Ussher (Black Red); W. D. Allen (Duckwing). Commended, W. D. Allen (Duckwing).
BANTAMS (Sulphur or other variety).—First, A. W. Shaw (Black). Second, Hon. A. C. E. Roche (Japanese). Third, Hon. A. C. E. Roche.
ANY OTHER VARIETY.—First and Second, J. C. Cooper (Malay and Sultans). Third, C. F. Staunton (Black Ureda). Highly Commended, Countess of Bandon (Silky Bantams). Commended, Mrs. Dring (Grey Guelthers); F. W. Zurichst (Sultans); Hon. Mrs. H. E. Bernard (Sultans).
TURKEYS.—First and Third, J. C. Cooper (Cambridge). Second, Mrs. Clements (Norfolk). Highly Commended, Mrs. Clements (Norfolk); H. Briscoe (Cambridge). Commended, J. C. Perry.
GESE (White).—First and Commended, J. C. Cooper (Emblen). Second, Mrs. Warburton. Highly Commended, Mrs. Warburton; E. Pike (Danubian).
GESE (Coloured).—First, A. E. Ussher (Toulouse). Second, J. C. Cooper (Toulouse). Highly Commended, A. E. Ussher (Toulouse); Rev. J. O'Sullivan (Chinese); E. Pike (Toulouse); J. Howard (Chinese); Dr. Parker (Chinese).
DUCKS (Aylesbury).—First and Third, J. C. Cooper. Second, J. T. Wakeham. Highly Commended, R. P. Williams.
DUCKS (Rouen).—First and Second, R. P. Williams. Third, J. C. Cooper.
ANY OTHER VARIETY.—First, R. P. Williams (Pintail). Second, Dr. Parker (Muscovy). Highly Commended, R. P. Williams (Shell Ducks); T. Babington (Widgeon, Mallard, and Duck).
SPECIAL PRIZES.
 The Society's silver cup, for the greatest number of points, J. C. Cooper.
 Silver medal presented by Mrs. Lyons, for the best pen of fowls in the Exhibition, Houdeans, La Fleche, and Crève Cœurs excepted, J. C. Cooper.
 Silver medal presented by F. W. Zurichst, Esq., Dublin, for the best pen of Crève Cœur, Houdean, or La Fleche, — Fitzgerald.
POUTERS (Black).—*Cocks.*—First and Second, J. Montgomery. Highly Commended, Dr. Harvey; J. H. Perrott. Commended, Dr. Harvey.
Hens.—First, Second, Highly Commended, and Commended, J. Montgomery.
POUTERS (Blue or Silver).—*Cocks.*—First and Second, J. Montgomery. Highly Commended, Dr. Harvey; J. Montgomery; J. H. Perrott. Commended, Dr. Harvey. *Hens.*—First and Second, J. Montgomery. Commended, J. Montgomery; J. H. Perrott.
POUTERS (Red or Yellow).—*Cocks.*—First and Second, J. Montgomery. Highly Commended, J. Montgomery; Dr. Harvey. *Hens.*—First, Second, and Highly Commended, J. Montgomery (Red and Yellow). Commended, J. H. Perrott (Red).
POUTERS (White).—*Cocks.*—First, Dr. Harvey. Second, J. Montgomery. Highly Commended, J. H. Perrott. Commended, J. Montgomery. *Hens.*—First, J. Montgomery. Second and Commended, Dr. Harvey.
POUTERS (Mead or other colour).—First, Second, Highly Commended, and Commended, J. Montgomery. *Hens.*—First and Second, J. Montgomery.
CARRIERS (Black).—*Cocks.*—First and Second, Dr. Harvey. Highly Commended, H. L. Tivy; G. A. Wherland. *Hens.*—First, Dr. Harvey. Second, J. Montgomery. Highly Commended, G. A. Wherland. Commended, G. A. Wherland.
CARRIERS (Dun or other).—*Cocks.*—First, G. A. Wherland. Second, J. Jeffries. *Hens.*—First, Dr. Harvey. Second and Highly Commended, G. A. Wherland.
TUMBLERS (Short-faced Almonds).—First and Second, Dr. Harvey.
TUMBLERS AND KITES (Short-faced).—Prize, Dr. Harvey.
TUMBLERS (Mottles or other colour).—Prize, J. F. Blennerhassett.
TUMBLERS, BALDS, OR BEARDS (Short-faced).—First and Second, J. F. Blennerhassett (Blue Beards).
TUMBLERS, BALDS, OR BEARDS (Common).—First, J. F. Blennerhassett. Second, J. Pike.
TUMBLERS (Common, any other colour).—First, H. L. Tivy. Second, J. H. Perrott.
BARDS (Black or Dun).—First and Second, J. Montgomery. Highly Commended, J. H. Perrott. Commended, R. Lane.
BARDS (Any other colour).—First, J. Montgomery (Yellow). Second, G. A. Wherland. Highly Commended, J. H. Perrott (Yellow). Commended, J. Jeffries; J. F. Blennerhassett; R. Lane (Red).
JACOBS (Red or Yellow).—First, J. H. Perrott (Red). Second, J. Pike.
JACOBS (Any other colour).—Prize, T. O'Grady.
FANTAILS (White).—First, R. Lane. Second, T. O'Grady. Highly Commended, E. & J. M'Crea; J. H. Perrott. Commended, J. Pike.
FANTAILS (Any other colour).—First and Commended, J. F. Blennerhassett (Black). Second, J. Pike.
OWLS (Blue or Silver).—First, J. Jeffries (Blue). Second, J. Pike. Highly Commended, J. F. Blennerhassett. Commended, Mrs. Warburton.
OWLS (Any other colour).—First, J. Montgomery. Second, J. H. Perrott.
TRUMPETERS (Mottled).—First, J. H. Perrott. Second, J. F. Blennerhassett.
TRUMPETERS (Any other colour).—First, J. Montgomery (Black). Second, J. H. Perrott.
TREBLES.—First and Second, J. F. Blennerhassett. Commended, R. Lane.

NUNS.—First and Second, J. F. Blennerhassett.
MAGPIES.—First, T. O'Grady. Second and Commended, J. F. Blennerhassett.
ANY OTHER VARIETY.—First and Second, J. Montgomery (Lace Fantails, and Silver Runts). Highly Commended, H. & J. M'Crea (Austrian Pouters); J. F. Blennerhassett (Maned). Commended, J. F. Blennerhassett (Brunswicks and German Ice).

Silver cup for the greatest number of points won in all classes, J. Montgomery.

Silver medal for the best pair of Pouters, J. H. Perrott.

SWEEPSTAKES FOR PIGEONS HATCHED IN 1897.—*Pouter.*—Prize, J. Montgomery (Red). Highly Commended, Dr. Harvey (White). *Carrier.*—Prize, Dr. Harvey.

SONG BIRDS.

CANARIES (Yellow without Crest).—First and Second, J. Hodder. Highly Commended, J. Hodder. Commended, M. McCarthy, jun.

CANARIES (Yellow with Crest).—Prize, Mrs. Hodder.

CANARY (Green Coloured or other).—First, A. Veitch. Second, Mrs. Hodder. Highly Commended, M. McCarthy, jun. Commended, J. Hodder.

GOLDFINCH MILES.—First, Mrs. Hodder. Second, W. P. Harris. Highly Commended, P. Cronin. Commended, Hon. E. B. Roche.

LINNET MILES.—First, J. A. Ross. Second, M. McCarthy, jun. Highly Commended, W. P. Harris. Commended, T. Walsh.

BLACKBIRDS.—First, D. Sullivan. Second, Mrs. Hodder.

THRUSHES.—First, Mrs. Hodder. Second, D. Sullivan.

WOODPECKERS.—Prize, J. O'Connor.

SYLVIANS.—First and Second, J. Lennie. Highly Commended, Mrs. Hodder. Commended, J. Lennie.

BULLFINCHES.—First, Mrs. Perry. Second, Mrs. Hodder.

GOLDFINCHES.—Prize, Mrs. Hodder.

LINNETS.—First, Mrs. Hodder. Second, E. Linahan.

The Judges were for *Pouter*: Mr. Tegetmeier, of London; *Pigeons*: Mr. P. H. Jones; *Other Birds*: Mr. Parker. — *Cork Examiner*

LEIGHTON BUZZARD POULTRY SHOW.

THE Corn Exchange, in which this Show was held, is everything that could be desired for a poultry show, and the arrangements throughout were good. The Ipswich pens were engaged, and the Exhibition was exceedingly well supported; in fact, the attendance quite exceeded the hopes of those gentlemen through whose endeavours this meeting originated. The silver cups given as principal prizes were very chaste in design, and certainly were quite of the value represented.

On referring to the prize list, which we published last week, omitting this report from want of space, it will be seen that the competition embraced many birds of the very highest character from the most noted breeders; and, as a whole, it very rarely happens that in a first show there is so much merit in the generality of the classes. In Grey *Duckings* the Show was especially good, Mrs. Seamons taking the first and third prizes, and W. Denison, Esq., the second position. The *Spanish* class was extraordinarily good, Francis James, Esq., exhibiting two pens of birds that together proved one of the most attractive features of the Show. The *Cochans* were exhibited in one general class, open to any variety. Mrs. Clarke's White ones were of especial merit; in fact, this lady's very large contributions of poultry exclusively of white feather met with the approbation of every one. The peculiarly good condition and spotless purity of plumage that, without a single exception, the whole of this lady's birds possessed, was most creditable to the home management, and formed a remarkable feature of the Show. *Brahmas* were well shown, the Hon. Miss Douglas Pennant securing the silver cup, in rather a large class, with a very superior pen that had travelled from so distant a spot as Bangor for this meeting expressly. The *Hamburghs* were the most deficient in merit of any classes in the Show, though the *Polands* and *French* fowls made ample amends. The *Boston* classes were excellent, a pen of very perfect Black-brasted Reds belonging to Mr. Jeffries, of Ipswich, being the Bantam cup-winners.

One of the greatest points of excellence in the Exhibition was the very close competition in the *Turkey*, *Geese*, and *Duck* classes; and when we add that Mrs. Seamons, Mr. J. K. Fowler, and Lady Margaret Maedonald, with many others of our most noted breeders, had contributed their best birds, it is scarcely necessary to remark that the birds were first-rate. Of *Pigeons* there was a very good general collection, the Carriers and Pouters being especially good.

In the Extra Stock classes the Silver Pheasants exhibited by Baron Rothschild were in extraordinarily fine feather, but proved so excessively wild as to detract sadly from the pleasure of visitors in seeing them. It was evident they were quite unaccustomed to strangers. Among the *Pigeons* were shown some Red and some Black Swallows, worthy of a position at any meeting. The weather was cold but bracing, and the novelty of the sight kept the Corn Exchange constantly well filled.

ULVERSTON POULTRY SHOW.

THIS was held on the 1st and 2nd inst. in the Victoria Concert Hall, and in point of entries was a success, though, owing to other shows occurring at the same time, it doubtless suffered to some extent.

Spanish formed a moderate class, the hens in all the pens being much superior to the cocks.

Duckings were few in number, and rather poor.

Game fowls were the leading feature of the Show, there being seven

classes, and upwards of eighty entries. Of these many pens were most excellent. In Reds Mr. Fletcher won with an excellent pen of Brown Reds, to which also was awarded the silver cup for the best pen in the classes for Reds, Duckwings, and Any other variety; but the other birds in this class were not of any note. The first-prize Duckwings, though best, were not good in colour; the second were good; but those forming the third-prize pen were so very small as to almost destroy their chance, though of rare excellence in colour. The class for Game of any other variety was a decided failure, and only one second prize was awarded, and that to a Muffed or Bearded pair. One pen contained a pair of birds beautifully bedaubed with magenta about the eyes and face, doubtless to destroy the sickly appearance of the flesh; but the operator had overshot his mark, and the result was a disqualification.

In Buff *Cochin-Chinos* the first-prize pen contained a remarkably fine hen, and the second a cock which ought to be mated to the former. Of Brown and Partridge there were some fine pens, but many of the others suffered from diseased legs and feet. White Cochins were such a class as is seldom seen; and so good was the first-prize pen that the silver cup for the best Cochins or Brahmas was awarded it. The second and third-prize pens were little inferior in point of merit. The *Cochin* chickens were numerous, and the first-prize pen was especially noteworthy.

There was a good master of *Brahmas*, and the competition was very close. The whole class was commended.

Golden-pencilled *Hamburghs* were good, as were also the Spangled of both colours; but among the Silver-pencilled were birds sadly out of condition, though the cup for the best pen of *Hamburghs* was awarded in this class to Mr. Beldon's birds.

The Variety class contained *Polands*, *Creve-Coeurs*, and *Houdans*. In Game *Bantams* the prizewinners were of great beauty, and the class large. A neat little pen of Black took the first prize, a pen of miniature Cochins was second, and a pretty pen of Gold-laced third.

In *Ducks* Aylesburys were poor and very badly shown in most cases; but the Rouen were much better, and the Ducks in the Variety class exceedingly fine.

In the following Game classes many of the apparently best birds proved defective on handling, both in respect to softness, want of condition and crookedness of breast; and many had Duck claws, though in other respects good.

In single cocks two silver cups were awarded, and two money prizes; the first prize going to a Black Red, and the second and third positions were secured by two very good Brown Reds shown by Mr. Robinson.

In the class devoted to local exhibitors a cup was given by the Hon. Secretary, and the competition was very close; in fact, so good were the birds, that they would have stood well in the general classes. Of Game chickens there were birds as good as could be desired, and the cup was carried off by Mr. Fletcher's Black-breasted Reds. One of the best birds in the Show was, perhaps, the single Game Bantam cockerel which won the first honours. Some very good Game pullets were shown in pairs, the first and second-prize birds being especially fine. We gave the awards in our last week's number.

ESKDALE POULTRY SHOW.

THE arrangements at this Show, of which we published the prize list last week, were excellent. The entries were scarcely so numerous as last year, owing to the fact that three other Shows, Ulverston, Aberdeen, and Paisley, were held on the same days; however, the deficiency in numbers was more than counterbalanced by the superior quality of the birds shown.

The single *Duckling* cock class, considering the prize of a silver cup, we thought a very moderate lot, with the exception of the first-prize bird of Miss Malcolm. The *Game* cock prize of a silver cup was competed for by a capital lot of birds, chiefly from the neighbourhood. The first-prize bird was a splendid Black Red belonging to Mr. Hardie, good alike in hand, style, and feather; the second and third prizes went respectively to Brown and Black Reds, scarcely equal in form to the first bird. The Silver-Grey *Dorkings* were a very fine collection, the first-prize birds being very noticeable for their size and trueness to colour. The Dark Grey *Dorkings*, old and young, were a good lot, especially the first-prize chickens. The adult *Spanish* class was good, the first-prize birds of Mr. Paterson were a fine pair; and in chickens, the first prize cockerel was decidedly one of the best that has ever been exhibited in that part of Scotland; the pair was immediately claimed for £5. In the old *Game* cock and hen class there was a fair collection, Black Reds taking the first prize; and in chickens Black Reds were again in the front, a very fine pen being first; Brown Reds were second; and in Any other variety of Game, good Piles were first, and Duckwings of fair quality second. In the *Cochin-China* and *Brahma Pootras* classes there was a small show, but among them were several good lots. *Hamburghs* appear to be the breed at present most cultivated in Scotland. The first-prize Silver-pencilled, first-prize Golden-pencilled, first prize Silver-spangled, and first-prize Golden-spangled, were birds of great merit. In the Variety class, good *Creve-Coeurs* were first, and capital silver *Polands* second. *Game Bantams* mustered strongly; the first-prize Black Reds were a fine pen, and the first-prize Duckwings were also very stylish and good. *Turkeys* were a fine lot and of great weight. *Geese* were large, and beautiful in both shape and colour. In *Ducks*,

the Aylesburys were a fine collection, especially the first-prize birds: the Rouens were large, and of good colour, Mr. Hardie again taking first and second prizes. Of other varieties of Ducks there was a good show. In the cottagers' class the birds would have done credit to any show; in fact, many of the birds would have competed successfully in the general classes, there being scarcely an indifferent pen in the lot. *Pigeons* mustered strongly, and some of the specimens were of great merit, conspicuous being the first-prize Nuns, Almonds, Kites, Turbats and Fantails.

PAISLEY ORNITHOLOGICAL ASSOCIATION'S SHOW.

IN regard to the quality of the specimens which competed, this was the most successful Exhibition that this Association has yet held.

Of the 394 pens of poultry, *Spanish* occupied forty-five. A great number of the old birds were rather over-faced, but the young class showed plain and pure faces and lobes. Mr. McInnes's second pen was universally admired. Coloured *Dorkings* have greatly improved in weight. The young Silver-Grey cock of Mr. Alston was a beautiful bird. In *Cochin-Chinos*, Mr. Stewart was again successful with Buifs, but was hard pressed with the Countess of Eglington's Whites. There was a great improvement in the *Brahma Pootras*, especially in the colour and markings of the hens. The old *Scotch Breed* was well represented in twenty pens. The *Hamburghs* as usual came out in large numbers; seventy-three pens were occupied by them. The Silver specimens were better than at previous Shows. The first Pencilled cock of Dr. Colligan was much admired. The *Polish* fowls were extra good. In the forty-three pens of *Game*, some fine specimens were shown by Mr. Alexander and Mr. McNab. Mr. Menzies' Duckwing cock was very superior. The *Game Bantams* occupied thirty pens. The Brown Reds were perfect in colour. Black Bantams were not so numerous, thirteen pens competed, but the quality far surpassed what is customary in this quarter.

The *Pigeon* department numbered 123 pens. In Pouters, Mr. Sharp's Blacks, and Mr. Sutton's Blues were good. Fantails and Jacobins were well represented. The Nuns, although not numerous, were good.

The *Canary* department was all that could be desired. The entries here were more numerous, but the specimens were never so good.

The names of the Judges, and a list of their awards appeared last week.

DUMFRIES AND MAXWELLTOWN ORNITHOLOGICAL SOCIETY'S SHOW.

LAST year pens were provided for the large fowls; on this occasion pens were also procured for Bantams and Pigeons. The arrangements of the Show were most excellent, and were admirably carried out by the indefatigable Secretary, Mr. John Maxwell, aided by a very efficient Committee.

This flourishing Society has already done much good in stimulating the breeding of poultry of a superior quality. Each successive year shows an improvement in the character of the poultry exhibited.

The entries were 385, as last year; scarcely any pens were empty. The Show, for the superior quality of the poultry exhibited, was the best ever seen in Dumfries.

Game fowls headed the list. The Black Reds, &c., were very superior. The first-prize cock belonging to Mr. J. Harding, Maxwelltown, is a very handsome bird—he was also first at Dalbeattie Show. The young birds in the class were not so good as the older, but the first and second prize pens were excellent. Of Duckwings and Whites there was a capital show. Mr. Thomas Maxwell taking both first and second prizes with two pens of fine fowls. In the Young class the first prize and silver medal were gained by Mr. John Brough, Carlisle.

In *Spanish* fowls, Miss Nelson took both first and second prizes, and the silver medal in the Any age class. In the class for young birds, Mr. John Kerr was first with a superior pen.

The *Dorkings* were the pride of the poultry department, being nearly all of a high character. The first prize and silver medal in the Any age class went to Mr. Arundell, and a capital pen from Mr. W. Lyons, Kilmichael House, was second. The class hatched in 1867 was excellent, the first pen, belonging to Mr. Thomas Ferguson, being very good; and the second, from Heathat Hill, closely rivaling them.

Only four pens of *Cochin-China* fowls of any age were shown, but the whole were remarkably good. Lady Jane Johnstone Douglas gained the first prize with a pen of white birds, of Bras House blood. Mr. Moffat gained the second prize, and was highly commended, for two pens of the same strain of blood. Of young birds there was a good show—the best pen being from Lady Jane J. Douglas, Lockiebie House. There were some good birds among the *Brahma Pootras*.

The Aylesbury Ducks, though few, were very good—the birds being large and of handsome shape. Those from Lockiebie House were first-rate, and the second-prize pen from Kilmichael House were nearly equal in merit. Rouen Ducks were more numerous, and most of the pens contained very choice birds. Mr. Thomas Parker gained the first prize. The Bantams were very good.

The entries of *Pigeons* were numerous, and there were many very beautiful birds in all the classes.

The competition in *Cage Birds* was first-rate, Mr. James Thorpe gaining seven of the first prizes for Canaries.

We gave a list of the awards last week.

POUTERS AT CALNE.

Nor having seen Mr. Heath's Pouters for two years, and knowing that he had greatly increased his stud during that time, I paid him a visit recently. I was fortunate in having a bright, sunshiny, mild winter's day, which the birds enjoy, and upon which they show up well; also, I arrived when all the stock was at home, and before Mr. Heath had sold off a number, which he does annually before the breeding season.

I was prepared to see fine birds, as not only Mr. Heath bought some of the stock of the late Mr. Bult, but he has risen in the fancy, frequently taking prizes at the largest shows. Nor was I in the least disappointed, but exceedingly gratified.

A house for Pouters should be set differently from that for any other Pigeons. It is best on the ground floor, with lofty and roomy pens, in front of which the fancier can walk, his pets being thus easy of access for taming and caressing. Hence, a loft above a stable or coach house is unsuitable, as in such a man often cannot stand upright, and the Pigeons' nests are on the floor. Mr. Heath has made an excellent house for his birds by advancing a building from the south side of a high wall. The pens are arranged chiefly with their backs to the wall. The floor of the house is well boarded, and all very clean; there is plenty of air and light, and every ray of sun is admitted. A large sash window is in the centre of the front, which in the daytime is opened, and the birds come out into a square wired court, in the middle of which is a fountain, the basin being kept the right depth for the Pouters to wash; and a pretty sight it is to see the elegant birds wading about, splashing, drinking, and enjoying themselves.

I found Mr. Heath particularly strong in White Pouters. They are long fine-shaped birds, of apparently great constitutional vigour. He has also Red Pies, Black Pies, Yellow Pies, and Meales. Even those not long enough to secure a prize would be famous birds for a beginner, or one keeping Pigeons only for amusement. Mr. Heath has invented a machine for measuring Pouters, which is a great improvement upon the old plan of stretching them along the front of a pen.

After spending much time in examining the birds, I fed them, and it was a beautiful sight to see the floor covered with well-bred Pouters of good contrasting plumage. The feeders were mingled with them, and, I own, did take off a little from the beauty of the scene, but when it is possible, I incline to the plan of hand-feeding.

The stock of Mr. Heath is well worth seeing, and I might travel many miles before I saw one equal to it. May he long prosper, and may his careful and judicious management of that noble variety of Pigeon, to which he is devoted, bring him all the success he desires. And I hope his example (and that of a spirited fancier is always contagious), may stir up others to cultivate that finest and most striking of all Pigeons—the English Pouter.—WILTSHIRE RECTOR.

PIGEONS.

At the request of several of our principal Pigeon fanciers in Glasgow and in Edinburgh, I have been induced to examine the merits of the book entitled "Pigeons: their Structure, Habits, and Varieties." By W. B. Tegetmeier.

When first advertised I looked forward to its publication with no small interest, the breeding, rearing, and study of "domestic Pigeons" having been my principal pastime from boyhood. Having read all the old works on "fancy Pigeons," all the books I could lay hands on pointing in any degree to that subject, and knowing that these books were open to all inquirers, I felt hopeful that Mr. Tegetmeier would offer to the present generation something new, if not important, founded on his own experience; that now the long-felt want was to be supplied—a work so composed as to excite the interest of general readers, to unfold fully the beauties and peculiarities of that handsome class of birds, and thus aid in creating a love for them, and possibly swelling the ranks of our fanciers and breeders.

In the first part of this book we have an account of the structure and general character of Pigeons, and, in connection with that, a quotation from the Duke of Argyll's "Reign of Law,"

and Chapter I. closes with a needless quotation from John Hunter, and a page of remarks on the Doves indigenous to Great Britain.

Chapter II. consists of two quotations: one from Macgillivray, and the other from Henry D. Graham, on the Rock Dove.

In the Introduction to this book a very interesting statement is promised us—something really new to me—viz., "The evidence which proves all our varieties to have been derived from one and the same wild species." This statement Mr. Tegetmeier is to consider. The so-called evidence occupies twelve pages. Ten of these pages are quotations from Darwin, Huxley, &c. (and Mr. Tegetmeier here introduces himself very ingeniously as "a great authority"). This so-called evidence—the mere opinions of two or three scientific men (all of which we have read before), amounts to nothing as far as *proof* is concerned. The most guarded, and, I think, sensible writer on this subject, quoted in the pages referred to, seems to be Professor Huxley. He says, "I daresay there may be some among you who may be Pigeon fanciers, and I wish you to understand that in approaching the subject, I would speak with all humility and hesitation, as, I regret to say, that I am not a Pigeon fancier. I know it is a great art and mystery, and a thing upon which a man must not speak lightly."

Mr. Tegetmeier, however, shows a bolder front than the learned professor does on this subject, and among the few remarks he makes we have the following:—"Some Indian fanciers in distant ages (for Pigeons have been kept as domestic pets many hundreds of years in India), observing that certain Pigeons were produced with extra feathers in the tails, mated them together, and again selecting those of the offspring that showed the desired characters, succeeded eventually in creating the Fantail." (The ancient Indians referred to seem to have had nothing to do with the "creating" of the tremulous motion in the neck of this bird). I do not know whether Mr. Tegetmeier intends to offer this as a fact, or merely as his own idea; but really it reads like some baby story, such as we have heard in the nursery, beginning with "Once upon a time, long, long ago," &c. However, I speak with reserve; Mr. Tegetmeier may have the advantage of me. It is possible he has in his possession, or may have obtained a sight of some unpublished manuscript of our old friend Baron Munchausen; if so, I give up this point. No one can find fault with, or for a moment doubt the correctness of the information Mr. Tegetmeier gives us regarding his own paternal parent: what he was, and where he lived; but when he attempts to father all the beautiful varieties of our domestic Pigeons on the small Blue Rock Pigeon, it comes to be quite another question. There is no intention, nor is this the place or time to argue this subject; but at a future period I hope to be able to enter fully into it.

Part III. of this book, with the exception of two pages, is on the "Pouter." The principal portion of it is made up of quotations, and of the few remarks made by the compiler, some of them had better have been left out. I refer more particularly to the matching of colours. Mr. Tegetmeier recommends matching a "Black Pied with a Mealy." If this be done the consequence would be, in the produce, a sooty or blue black, showing the bars on the wing. Then a "Red Pied and Mealy, but with some risk to the bright red." Of course in the produce the fine colour would not only be destroyed, but the bar would also appear. Then "Yellow Pied may be matched with Mealy with advantage." The produce would be mostly Mealy Yellows, with strongly-defined bars. If yellow, pale in colour—lemon, in fact, showing the bar. And again, worst of all, "Blues may be matched with Reds." Here, again, would the colour be destroyed, and the bar introduced where it would be most objectionable. Lastly "Blue Pied and White are not a desirable match, as very white pied birds, or white-splashed, or speckled with other colours would most probably result." This last is a most desirable match; it will sometimes produce perfectly marked Blue Pied, and at other times perfect Whites; but if splashed or speckled with other colours they will prove the finest stock birds for both Blue Pied and Whites that can be had. See the Pouters bred in Scotland. But I fear Mr. Tegetmeier does not know the colour in Pigeons termed "Mealy," as no one who understood colours would advise such combinations.

The compiler talks of the "slavish fear of breeding away from some one particular colour," and refers to "the late Mr. Bult," an ardent fancier, "who rejected this practice" of confining himself to one particular colour in matching, or even

to separate breeds; "and it was to his freedom of action that his great success was mainly to be attributed." I knew Mr. Bult well, and as well do I remember when he destroyed his stock of Pouters by crossing them with a Mottled Runt, and finding it hopeless to support his position as a fancier and breeder of Pouters by the produce of this unfortunate cross, he applied for and received birds from his friends in Scotland, which were the origin of his "celebrated strain." The cross-bred Mottled birds were runtish to the last. The chapter on the Pouter is lengthened-out by accounts of two sales of Pigeons by auction, of not the slightest interest.

In Part IV. we have the Carrier and Dragon; nothing new, principally quotations, and then follow twenty pages, five of them running into the following part, on "Homing Birds," or, in other words, Mongrels, bred for flying, shooting matches, or the table. I fear these twenty pages will be lost to those whom they most concern, as the class who keep this sort of bird can, as a general rule, seldom afford, and are as little inclined to pay the sum of 8s. for any book. Mr. Tegetmeier's "experience of the habits and management of these Homing birds dates from a distant day" he says; and this class of birds seem to have been his "fancy," which in a great measure accounts for his want of knowledge of the distinct breeds from their origin downwards.

We have in Parts V., VI., VII., and VIII. the Tumbler, Barb, Fantail, Trumpeter, &c., an array of quotations, many of them useless, and, according to the compiler's own showing, absurd. The only original remark in those parts, which I feel constrained to notice, appears in page 152, in connection with the Fantail. The compiler writes, "The author of 'The Dovecote and Aviary,' in his facile and pleasant manner, plays, as usual, round about his subject, without giving us any new or even accurate information respecting it." I confess I do not understand the purport of this paragraph. If nothing "new or accurate," why give us a full page quoted from this author? Why, would the last part without it appear too thin? I do not personally know either the compiler of "Pigeons," or the author of "The Dovecote and Aviary;" but certainly the latter is an "author," and one of no small merit; and although I cannot agree with him in all his ideas and remarks, still his work alluded to is written in an original and popular style, and its pages tell us that the author is one who writes from subjects studied by himself.

This book closes with the "Laws relating to Pigeons," and "The Diseases of Pigeons." The former is not worth the time occupied in reading it, while the latter leads me to the conclusion that Mr. Tegetmeier has never kept a Pigeon worth attempting to cure; if so, he gives us none of his experience, does not say when or how he succeeded or failed, or even if he tried. He tells us, "If birds are kept in localities where they are permitted to fly at large, housed in well-sheltered lofts, having a sufficient supply of wholesome food, clean water, &c., . . . that disease will be almost if not entirely unknown among them." I have fourteen pairs of Blue Antwerps, kept for feeders, flying at large in a fine airy locality outside this city; they are well sheltered in a large clean loft, and have the best of everything. Almost daily, sometimes two or three times a-day, they will take a flight of from three to six miles at a stretch. During this past year I have had four cases of wing disease among them, one of fallen gizzard, four of roup; and three young Pouters being fed by some of them, died of purging. Mr. Tegetmeier talks of "scrofula" among Pigeons, and of its being "hereditary." No such disease ever attacks Pigeons, nor is there one that is "hereditary;" not one disease to which they are liable is even infectious. "Roup," the most likely of all to be infectious, is not so, as any fancier of experience must have discovered long ago. As for the prescriptions for the diseases, what does Mr. Tegetmeier recommend? "Copaiba balsam" and "nitrate of silver," ancient prescriptions, indeed. I have tried them twenty-five years ago, and found them to be worse than useless—the best drugs for irritating the diseases and killing the birds.

Mr. Tegetmeier is evidently a disciple of Darwin, and professes to adopt the theory of that author, as far at least as the present subject is concerned; but although aspiring to scientific attainments, he does not attempt to give us any experience of his own in support of this theory, or any reason why he should insist, as he does, upon those who may read his quotations adopting it also. This style may suit Mr. Tegetmeier's purpose, and that of all copyists and compilers—those who write from what others have written, but who have not taken their observations from the subject itself; but I feel convinced

that neither the theory, which is so constantly introduced, nor this book-making, can be acceptable to the intelligent and educated Pigeon fanciers of the present day.

No one can write on this subject satisfactorily, even to himself, however scientific he may be, unless he be a "Pigeon fancier" and one of practical experience; and Mr. Tegetmeier shows himself throughout this book, to say the least of it, ignorant of the subject he has taken in hand.

The volume is, with the exception of a few pages, composed of quotations (Mr. Tegetmeier actually quotes *himself* more than once); and although void of anything new, I find on the covers of the last two parts he is advertised as "author of 'Pigeons.'"

The coloured illustrations, as a whole, are a failure; some of them are certainly near the mark, and I rather think the original outline of others may have been destroyed by the "printing in colours." The Pouter is the best; but no one ever saw a Pouter blowing in the position represented—standing on one foot. If the bird is meant to be represented as walking, the raised foot is much too high; otherwise it is well drawn and beautifully printed. The Almond Tumbler is the worst. The woodcuts, with some exceptions, are truthfully drawn and spiritedly engraved. The principal exceptions are the front and back views of the Fantail. The former looks like an apoplectic chicken issuing from a lady's muff, and the latter reminds us of something like the footprint of an unshod horse, both being monstrous caricatures of that graceful little bird. The artist, like the writer, must be a practical Pigeon fancier, to do his work perfectly in this very peculiar department, for without doubt it is "a great art and mystery."—JAMES HUIE, *Rowan Cottage, Crosshill, Glasgow.*

CANARIES.

ALLOW me correct an error that has crept into your report of the Sunderland Ornithological Association's Show. Instead of £5 in money, Mr. Ashton won £11 10s. in money, and also sold two Goldfinch mules for £20. This is almost the highest price, if not quite, ever paid for Canaries at shows. I mention the fact to show that the interesting study of breeding Canaries and mules is, I am glad to say, on the increase. Why cannot we have a standard of excellence and a Canary club just as poultry fanciers have theirs? I am quite willing to work if somebody will help me. We could have a large exhibition every year at some of the principal towns in England, and show the public generally that Canary-breeding is as pleasant and instructive a study as breeding Pelargoniums or bees; and when properly carried out, and good specimens bred, as profitable, if not more so. I will subscribe £20 towards a club, and work willingly if, as I said before, anybody will help me.—HENRY BEDWELL, *Polefield Hall, Prestwich, Manchester.*

DOINGS IN A SMALL APIARY IN 1867.

(Concluded from page 38.)

In connection with driving, I may mention a singular circumstance which happened to two of my stocks. On the 13th of July the morning was fine, sunny, and rather calm. About two o'clock in the afternoon clouds gathered in the west, and distant thunder was heard. Between 4 and 5 p.m. a heavy thunderstorm came on. The bees, acting on their instinct, returned to their hives in vast numbers some little time before the storm broke in force, and only a bee occasionally could be seen at the entrance. At this period I had left the garden and sought shelter. During the storm I observed a stream of bees suddenly issuing from a hive which I had casually cast my eye on, as I passed the window. My curiosity being excited, I looked at a second hive just within sight; there, too, the like occurrence was taking place. At each of the alighting boards cluster after cluster gathered and fell to the ground. The poor bees were actually being driven out of their hives by the heavy rain beating incessantly on the sides and roof of the casing. After the storm abated, I went and inspected the hives, and found them about as effectually deserted as though I had operated on them with a view to that end. There was a large cluster of bees under the bottom board, also a mass of bees on the ground, many of which were buried from the heavy splash. By night, most had betaken themselves to their hives, and the following day all went on much as usual.

In 1866 I asked the question, if common coarse brown sugar

would answer for feeding driven bees. Its not being affirmed that it would do so, I had resolved to try it myself. Out of nine driven lots of bees on the 31st of July I kept three, and designate them thus: D, beat-outs (two joined, 5 lbs. weight), placed in an octagon, straw, bar-and-frame (3), hive, home-made, and inducted at the same time as driven; and E, beat-outs (single, 2½ lbs.) placed in a 13-inch square box hive with bars and frames. To feed these, I purchased a quantity of the cheapest coarse brown sugar I could procure, made it into syrup, and commenced feeding therewith from the top of the hives, keeping the supply constant. This was readily taken by the bees, and in fifteen days D's hive was nearly combed, and a little food stored. E had six combs about halfway down, also a little stored. The weather being warm and open, and the scent from the syrup being strong, wasps were very troublesome.

I discontinued feeding for three weeks, when I again began with the same kind of food, but now I could not in any way induce the bees to take it. Day after day a few bees might be seen at the full feeder, apparently indifferent; store the food they would not. I tried adding honey to it, but with no better success, and after a week's further trial I was still no nearer my object of inducing them to store their combs, so I gave up the attempt, and tried the best brown sugar. This they at once began to store; also to extend their combs. They would store any amount—in fact, the two hives have been made up to weight with this. They have a fair share of sealed comb. I weighed them on the 4th of December, and found that each had consumed 2½ lbs. from the 17th of October. To establish each hive of bees cost 8s. 6d. They are healthy, and, I believe, will be found all right in the spring.

From this trial it would appear that the coarser sugar will not answer, except for the first week or two of comb-building. The combs are remarkably white. Personally I should object to its use, as from the very strong scent emitted wasps are exceedingly troublesome to the bees; besides which, bees from other hives attempt to rob, causing fighting and restlessness at hives.

A few further notes relative to the driven single lots of bees of the autumn of 1866 may not be without interest (for their previous history see vol. xi., page 399). From the time of driving, each hive of bees was rapidly fed up to weight. They wintered well, and became active and strong. Of the two given away, one threw a swarm on the 11th of last June, and a cast on the 23rd. From the other a swarm issued on June 16th, and from some cause returned; but on the 1st of July it threw off a very large swarm, which was retained by myself, and distinguished as C. At its head there was a fine and prolific queen. This did not swarm; it became, and still is, very strong, and had the season been favourable would, I have little doubt, have given a handsome super: even as it was, it gathered more than either of my old stocks. I now dismiss them, merely expressing confidence in the experiment, and assure other beekeepers who may desire to try the like, that they need have no fear of the result.

The year 1867 leaves me with six hives of bees, one being Italian, and I think all are in favourable condition.—J. G. C., South Northamptonshire.

HONEY HARVEST OF 1867.

REPORTS of the honey season of 1867 from different parts of the kingdom have now appeared in the Journal, but, so far as I have observed, not one has been sent in from Dumfriesshire.

Here, as in Edinburgh, the bees came through the winter splendidly, being injuriously affected neither by the severe frosts of January nor the mild open weather of February. On the 15th of the latter month pollen-gathering commenced, and when March arrived the apiary was full of promise; but from that time forward the weather became cold and ungenial, and during the early part of June the most flourishing hives were found to be retrograding, and would soon have perished from their stores becoming exhausted, had not a favourable change taken place on the 17th.

The last week of June and first thirteen days of July were all that the apiarian could desire, and the bees were not slow in taking advantage of the opportunity offered of collecting from such flowers as could be found. Had the white clover been as abundant as in former years, the yield of honey would have been large, but it was both late in making its appearance, and very scant when it did appear. The fine weather had

departed ere its full blossom was shed, and to this cause must be ascribed the deficiency of the honey harvest in the locality where I reside. However, with glasses well filled, one of which weighed 25 lbs., and stocks sufficiently stored to carry them through autumn and winter, I have not much room for complaint. There were also a few fine days in August, during which considerable progress was made in honey-gathering.

Though the season, therefore, has not been equal to many others, it can bear most favourable comparison with 1853, 1854, and 1862, when the collection of honey was nil.

The same thermometer, in the same situation, which this year indicated 70° for upwards of several days, never rose above 58° during June and July in 1862, and I had not a single swarm. With Mr. Lowe I regard a "swarm on the wing" as one of the most beautiful sights that the eye can behold.

There is this year, in my immediate neighbourhood, a peculiarity in the character of the honey from which I am happily exempt—viz., it is dark, treacly, and insipid, and so offensive to the eye as to repel many from eating it. The aphides bear the blame, and perhaps they deserve it.

December, now closed, has been a very trying month to bees, owing to the sudden and frequent changes of temperature. The 10th proved a most destructive day. It was fine and mild till about 2 p.m. The hives felt the influence, and sent out their inmates in myriads; but an unexpected cold set in. Bees on the wing were chilled before they could return to their homes, and they perished in vast numbers. I was from home at the time, but on the following day I collected about three thousand immediately in front of the hives, and succeeded, by the application of a little heat, in recovering a good many. The constitutions of resuscitated bees that have been subjected to any lengthened exposure are, however, always to some extent undermined, if not destroyed.

In common with those readers of the Journal who welcome it for the apiarian page alone, I perused with much interest the account given of the Egyptians' doings in Edinburgh. The short interval between first and second swarms, and the vast numbers of young queens reared to supply the place of the old one, are features quite new in our past experience.

No one has yet responded to Mr. Woodbury's request for suggestions as to how humble bees might be conveyed to Australia. I have found their queens during winter hibernating in a mound of garden earth, apparently without any protection save what the earth afforded.

Might not mould, mixed with moss, be put into a small jar, and the jar be deposited within a Syrian water cooler, and be thus made to answer the purpose of an ice room?

I throw out the suggestion, which may be worth nothing, in the hope that others will follow.—R. S.

OUR LETTER BOX.

WING OF BROWN RED GAME COCK (*An Inquirer*).—A dark russet brown bar is the proper colour on the wing of a Brown Red Game cock, and not black. There is often a green bar across the middle of the wing, but not always. The lower end of the wing should be of a dusky, dark, smoky brown, and not black. A Brown Red cock should show no black at all, except in the tail, legs, nails, beak, and eyes; and should "cut out" very dark, with dark fluff at the root of the tail.—NEWMARKET.

TURKEYS AT THE HANLEY SHOW (*A Looker-on*).—We are not acquainted with the weight of the birds. You seem to overlook the fact that great weight is not the only qualification for success. Birds in best condition at Manchester might be not in high condition at Hanley.

GROUND OATS (*Dunelm*).—Write to Mr. Agate, Slough Mills, near Crawley, Sussex.

EGG TESTERS (*C. L.*).—We have no faith in them. We certainly would not place eggs a month old under a hen if we could have others more fresh. We do not mean that some of them would not produce chickens; but, as a rule, eggs not more than a fortnight old produce the strongest chickens.

MANGOLD WURTZEL FOR FOWLS (*W. Golding*).—If boiled it is a very good addition to their food.

MANDARIN AND CAROLINA DUCKS (*S. D.*).—They would not succeed in a space 6 feet square.

CHEAP EFFICIENT HIVE—LIGURIANS (*New Subscriber*).—Try Payne's Improved Cottage Hive, described in page 5 of "Bee-keeping for the Many," but of a rather larger size, say 16 inches diameter by 9 inches deep, and adopt the sterilizing system in place of the collateral. Write to Mr. Woodbury, Mount Radford, Exeter, for information regarding Ligurians. You will find in "The Gardener's Almanack" for the present year, published at this office, price 1s., or free by post for fourteen stamps, a bee calendar from Mr. Woodbury's pen, which is pronounced by competent authority to be the most complete.

WEEKLY CALENDAR.

Day of Month	Day of Week	JANUARY 23—29, 1868.	Average Temperature near London.			Rain in last 40 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
23	Th	Meet. of Royal and Zoological Societies.	44.9	32.7	38.8	18	51	af 7	31	af 4	44	af 6	36	af 3	29	12 5	23
24	F		44.2	32.2	38.2	18	53	7	33	4	24	7	32	4	●	12 20	24
25	S	Royal Horticultural Society, Promenade.	44.3	32.6	38.4	20	52	7	35	4	58	7	31	5	1	12 54	25
26	SUN	3 SUNDAY AFTER EPIPHANY.	45.3	32.4	38.9	19	51	7	36	4	28	8	33	6	2	12 47	26
27	M	Meeting of Entomological Society.	44.3	30.9	37.6	18	50	7	38	4	55	8	35	7	3	13 0	27
28	Tu	Meeting of Institute of Civil Engineers.	45.5	30.0	37.8	21	49	7	40	4	20	9	43	8	4	13 13	28
29	W	Meeting of Society of Arts.	45.4	31.1	38.3	18	47	7	42	4	43	9	48	9	5	13 23	29

From observations taken near London during the last forty-one years, the average day temperature of the week is 44.8; and its night temperature 31.7. The greatest heat was 57°, on the 29th, 1863; and the lowest cold 5°, on the 28th, 1865. The greatest fall of rain was 0.90 inch.

ALTERATIONS IN SMALL FLOWER GARDENS.



LOWER gardeners as a rule have an appetite for new plants which is not easily satisfied, and often adopt some which have very little except novelty to recommend them; yet as regards the arrangement of colours in beds or borders, and the disposition of walks, clumps, standards, vases, and all those little features which contribute to form that harmonious whole which we call a flower garden, many even of the very best are just as apt to fall into conventional grooves, and follow year after year the same old beaten track, as our grandfathers were, whose standstill policy in these matters is now often commented upon.

A sociable old farmer has a laughable story or a good joke. He has told it over and over again, until half the county and the whole of his acquaintance know it as well as he does himself, so that it has long since lost all the raciness it ever had; yet to the humorous teller it somehow seems to be ever-green, and his whole fabric continues to be shaken with healthy laughter every time he retails it. So also it often happens with a clever young gardener; he has laid out a small flower garden, most likely from a design of his own. It is a decided success, and is acknowledged as such by all who see it. Then many an hour is spent in planning how it shall be planted, and in considering the heights and colours of the plants to be used, and the greatest number it will be possible for him to rear. After much pleasant labour and anxiety, it is filled, and in summer, when the colours have begun to produce their effect, the arrangement is found to be also a great success; people of taste, on whose judgment he can depend, say it could scarcely have been better, and he takes them at their word. It is a good story, and is repeated one season after another with only trifling variations, until we might almost imagine the plants to be well-drilled soldiers, falling into their proper places of their own accord. Now this constant repetition of anything, however beautiful, must in time weary the eye of taste; every line and curve, this blue bed edged with white, that scarlet one in which there never was anything but Pelargoniums, and these Humeas, have all grown so familiar to those for whose gratification they are there, that were the whole swept away, and the plan destroyed, a fac-simile could be produced by them with little or no difficulty. The gardener, too, if not unduly biassed by a natural prepossession in favour of his own production, may, perhaps, begin to feel just a little tired of looking at these stereotyped copies of his beautiful picture, but will most likely attribute it to the fact of their being all but constantly under his eye.

Now, though the breaking through an old and well-considered programme is often followed by consequences more troublesome than most people imagine, yet, in order to make and keep small flower gardens interesting to some, frequent changes are absolutely necessary; for, while more extensive grounds and parterres are, by the varied phases

they present from different points, and by their very breadth and massiveness, always attractive, yet with patches of perhaps a fraction of an acre this is not the case, and radical alterations every year or two, not only in the style of planting, but in the arrangement of the beds and walks, if possible, will be found very much more efficient for this purpose than any substitute of new for old bedding plants.

Where this cannot be done, the introduction of a few vases, of pieces of terra cotta, balustrades so placed that they can be half-covered with low Roses, a little ornamental wire trellising, or a few specimen shrubs where there were none before, will have a wonderful effect, and few means will be found more useful for transforming these miniature landscapes than a good stock of hardy shrubs grown in pots. All the attention they require is not very much, and they can be moved about at any season with the greatest ease, and sunk in the ground where wanted to suit any new arrangement. Those suitable for this purpose are so numerous that every one, instead of consulting lists, should rather be guided by his own taste. Rhododendrons, Portugal Laurels, Aucubas, Laurustinus, Berberis Darwinii, Thujas, Yews, and many of the finer Conifers may be used, and the culture and management of a considerable number of these as pot plants have often been treated of in the pages of this Journal.

In visiting the villa gardens round London, nothing strikes the wondering country gardener more than the great profusion of what are by courtesy called rockeries, it being rare indeed to find a garden without one or more of these curious creations, often in the most conspicuous places. They are not, nor are they, I believe, meant to be, imitations of anything grand in nature, and though custom may have made them attractive, yet to a stranger they appear anything but ornamental. I have often wondered if the busy city gentleman did not see enough of bricks and rubbish throughout the day, without having a cartload or two tilted up in his well-kept suburban garden on which to refresh his eyes in the evening. It is decidedly a mistake attempting rockwork at all on a small scale, and it is little less than an outrage to place it where there are no corresponding features, but where everything around is in the highest degree artificial; so that in laying out a small flower garden anew no provision should be made for it.

There are circumstances, however, under which these frequent changes are not desirable, and where they exist the gardener should always respect them as far as possible. I refer to that mysterious yet very real faculty, possessed more or less by every mind, of making the most prominent features with which we happen to be surrounded so many connecting links between the present and the past; where every tree, and shrub, and bed is a hieroglyphic laden with meaning to those who can read them—mementoes of lost friends, or objects around which are thickly clustered the recollections of many happy years, and which when removed or obliterated leave a painful blank which no new attractions can fill. And though the discussion of this part of the subject scarcely comes within the gardener's province, yet where these ties may be expected to exist

they should always be taken into consideration when planning improvements or alterations, and at all times tacitly respected.—**AYRSHIRE GARDENER.**

SUCCESSFUL ORCHARD-HOUSE CULTURE.

ABOUT four years ago the thought occurred to me how much I should like to erect an orchard house; so, after having made myself thoroughly acquainted with Mr. Rivers's little book on this particular subject, I consulted the advertisement pages of the Journal, and soon found the very thing I believed would suit me—namely, a tree cover, manufactured at Birmingham. After a correspondence with the firm that advertised, I had a length of 40 feet 6 inches erected against a south wall in my fruit garden, in Wiltshire. It was finished on Christmas eve, 1864, and so pleased was I with it, that I immediately applied to the same firm for 40 feet more; but on receiving a reply that what they had done for me was merely an experiment (a most happy one for me), and that they could not add more except at a very considerable advance in price, I wrote to a respectable firm in Bath, who contracted to add what I required at much less cost, and I have now an elegant structure 80 feet long, 9 feet high, and 8 feet wide, with ample ventilation at the top and bottom. And now for the results.

Fruit trees had been previously planted in the border against the wall, and the consequence was a good crop of Peaches and Nectarines, and also of Strawberries in pots, the first season. The second year I had a very fair crop of fruit, and the last season, 1867, more than seven hundred Peaches and Nectarines of exquisite flavour, besides a large quantity of Plums and Cherries grown in pots, and a few well-ripened Apricots.

I should also state that twelve choice Vines were planted at 64 feet apart, with the view of securing a partial shade, the thermometer during the last two summers having frequently ranged from 95° to 100°. From these Vines I have cut fifty-five bunches of well-ripened Grapes, most of them well coloured, some of the bunches of the Alicante weighing just 2 lbs., and grown without any artificial heat.

The thought often occurred to me, How is it I so frequently read of failures in orchard-house culture? Surely there must be some cause why fruit should not succeed under glass, and I have come to the conclusion that it is this: Either the master does not understand the management of the structure, or the gardener may, perhaps, think that he has quite enough to do without the additional work which an orchard house is sure to entail if properly attended to. I have the good fortune to have an old and confidential gardener, who has lived in the family for nearly half a century, and takes and feels as much interest in his work as if all under his care were his own property. I gave him Mr. Rivers's little book, with this remark, "Do not attempt to fill your head with too much at a time, but read a little, and follow the directions as nearly as possible, and I think we shall succeed;" and he has done this to my entire satisfaction, as the trees, after a heavy crop, are all looking most promising and full of blossom-buds for this year.

The border where the tree cover stands had plenty of trenching mould put into it when first made; and as the space is limited we frequently top-dress with rich manure, as the roots are always seeking nourishment from the surface. All the trees in pots are top-dressed twice every season with malt dust and sheep manure, and manure water of some sort is always used twice a-week. The Vines have likewise bones and charcoal; but two most essential points to insure success are free ventilation, and plenty of water which has been warmed by the sun's rays. All the plants are syringed before sunrise and after sunset.

Mr. Rivers, as well as Mr. Pearson, and others, have given some valuable receipts for smoking orchard houses, but I can assert that mine has never required this treatment, nor has it ever been done. We have found it an excellent plan to have the wall and fruit trees whitewashed during the winter, and early in the spring to have all the plants and Vines done over with a solution of lime, soft soap, soot, and sulphur, the latter being freely used in a dry state, and placed about the border in tins. It keeps the house thoroughly healthy, and it is an effectual preventive of the depredations of wasps, &c., as they do not like its fumes when the sun is shining; but it is removed just at the time the trees are in blossom, or my special friends the bees would decline to pay their always-welcome visit.

We have for some time given up using shreds, as on examining them I have frequently found a deposit of the eggs of

insects, &c., using as a substitute small hooked nails, and tying the shoots to them with matting.

I was often much amused, when first commencing, by some persons telling me, "You may grow Grapes if you like, but you are sure to find it an utter failure with other fruit trees; the leaves will all blister and curl up, and you will have no fruit"—more than a slight mistake most assuredly, as it has been often remarked by my friends that they never saw a better crop, or trees in finer condition, and as regards the flavour of the fruit, all have said who have tasted, Give me a Peach or a Nectarine grown under glass.

I can never mention Mr. Rivers's name without a feeling of gratitude for the immense amount of pleasure and gratification I have derived through him and his writings. May his shadow never grow less, and his substance ever increase.—**BATH.**

CUPRESSUS MACROCARPA.

It is to be regretted that this beautiful and fast-growing tree should be liable to the mishaps described by Mr. Kent and "A SOMERSETSHIRE PARSON," but I fear their complaints of its shortcomings will be too generally confirmed to leave much hope of its attaining the dimensions of a large tree. Still, we ought not altogether to despair of such a result. The fact of its doing well on a very stiff clay, as stated by "A SOMERSETSHIRE PARSON," is well worth knowing, especially as those having so obstinate a soil to deal with are not always acquainted with the ornamental trees which there thrive, although they may know what common trees succeed. I, as one, therefore, thank him for his communication, and beg to offer some further remarks on this handsome tree.

In the autumn of 1852 a small plant of this Conifer was sent here in a pot, and as it was reported to be not hardy, it was kept in a pot the whole of the following year. It was not until May, 1854, that it was planted out, but it had been out of doors a great part of the time, though sheltered in severe weather. In planting it out, the roots were carefully disentangled, and extended at their full length before being covered up; even one or two of the largest roots which would not give way were fractured rather than they should remain coiled close to the collar. Fortunately the plant had several roots all springing from its base, and did not consist of one or two large roots with all the others proceeding from them, as I have seen in other specimens, and which is much to their disadvantage. It is to this circumstance that I attribute in a great measure the after-success. Planting, I need hardly remark, checked growth much. Part of the season was spent ere the plant recovered, and in the following spring, that of 1855, it was about 24 feet high. Its progress then and afterwards was most rapid, for some years in succession averaging 3 feet annually; and last autumn it was 36 feet high, the growth in the past season having been less than in any previous year, owing to the plant having suffered so much from the frost of the previous winter.

Surrounding the tree there are specimens as high as itself of *Picea cephalonica*, Cedar of Lebanon, and Spruce Firs, which have, no doubt, had the effect of sheltering it from high winds, but whether they will be of service when this fine tree overtops them, time alone will determine. So far it has withstood our highest winds without further damage than a slight inclination towards the north-east, our highest winds coming from the opposite direction, but younger trees have succumbed to the gale. We all know that very high winds find out even sheltered places. An old friend of mine, a forester of long experience, used to remark that in general more trees are blown down in valleys and sheltered places than on hill tops, and I believe he was right.

The sheltered position of the tree no doubt preserved it in a great measure, and its hardiness appeared to be equal to that of the Scotch Fir and Cedar of Lebanon up to January, 1867. Indeed, I may say until May, for, unlike many other species of Conifers and shrubs, no token of injury appeared till in that month the foliage on all the lower branches and for a considerable distance up the tree became discoloured, and much of it fell off; the growth being in consequence more feeble. The foliage now, though still existing on the tips of most if not all the branches, is so thin that the interior dead twigs and naked stems can be seen all around. This was not the case before, for on walking round the tree no twig thicker than the finger could be seen without putting the branches aside, so dense was the foliage, and so long did it hang. The top of the tree was

scarcely affected, the damage being, as I have stated, chiefly lower down; but I have no doubt the partial injury to the top checked the energies of the plant, and the summer growth was therefore less than usual.

In comparing the hardness of this plant with that of others, it is difficult to arrive at anything approaching a definite conclusion. A *Pinus insignis* between 50 and 60 feet high and nearly 40 feet in diameter was scarcely in the least injured, although only 50 yards or so from it; while another specimen of the same species, about 40 feet high, and almost touching the *Cupressus*, was nearly killed, every leaf exhibiting that reddish brown colour so common last May, but it promises in a year or two to recover. Some other specimens of 30 feet in height or less were but slightly affected, and several smaller plants of *C. macrocarpa* in another place did not appear to have suffered at all. A plant of *Cupressus Udeana*, about 15 feet high, situated near the tall *Cupressus*, was completely killed, being almost the only specimen of any considerable size with which this was the case. *Thuja Lobbi*, 25 feet high, was not in the least injured; and *Thujopsis borealis*, 14 feet high, was almost improved by the cold.

I think "A SOMERSETSHIRE PARSON," or any one whose soil is of a very stiff clayey nature, might plant *Taxodium sempervirens*, which I have growing freely by the side of a piece of ornamental water in soil as stiff as can well be imagined, and it did not suffer more than a larger specimen growing near the *Cupressus macrocarpa*, in a moderately dry stony soil. I am, therefore, inclined to think, that if *Taxodium sempervirens* be not actually benefited by moisture, it will endure it. The effects, however, of the frost of January, 1867, appear in many instances so different in different cases, that we ought not to arrive at conclusions too hastily. Only a short distance from here, on a gentleman's lawn which is accompanied with a piece of ornamental water and a waterfall, a fine healthy *Aranea* growing within 10 feet of the water's edge, and the turf at its collar absolutely lower than the water level, passed through the winter without injury, while *Taxodium sempervirens* and *Cryptomeria japonica* only a short way from it, but both higher in the ground and farther from the edge of the water, were much injured. The *Aranea* was growing close to the waterfall, and if any water did escape through the cemented embankment, it would quickly be drained into the stream below. The tree looked remarkably well, although near it an Evergreen Oak, thirty or more years old, was all but killed. The effects of the frost of January, 1867, were so capricious that it would almost appear as if some cold wave had settled irregularly on certain places, altitude not being always the law regulating the degree of cold.

I should be glad to hear favourable accounts of the hardness of *Cupressus macrocarpa*, which I would place in a list of the best twenty Conifers known, and before last year I would even have included it in a smaller list. The past twelvemonth, however, has proved that in addition to its liability to be blown down by high winds, its hardness is questionable. This is unfortunate, as few plants of any kind present such a dense lively green; and in point of symmetry, quickness of growth, and other features, it seems indispensable where speedy effect is required. The fact of the tree having attained the height which it has done here, coupled with that of its not having been in the least injured by the winter of 1860-61, will, I hope, with the corroboration of other parties, weigh sufficiently in its favour to cause its being retained in the list of ornamental trees suitable for all places in the south of England, and for all but the most exposed situations in the north of England and in Scotland. The eccentricities, if I may call them so, of last winter's frosts may not be repeated for many years, and those places that were then so severely affected may escape next time. For my own part I fear danger to this plant more from wind than cold; and I imagine the misfortune Mr. Kent records has had many parallels, for, in a sailor's phrase, a plant carrying so much sail is in constant danger of being laid on its side. A careful bracing at the bottom at planting time is the only means of preventing such accidents, and even that does not always succeed.—J. ROBSON.

I HAVE read with interest the articles on the hardness of *Cupressus macrocarpa*, but my experience tells a different tale.

We had here four fine specimens varying from 18 to 24 feet high, and from 12 to 15 feet in diameter, which were entirely killed by last winter's frost. Not a green branch was left to tell us of the beauty that had perished, or to give the faintest hope of recovery; and the axe and saw had to be employed to

lay low what a few months before had added much beauty to the place. The situation is high, and the soil of a light peaty texture.

A neighbour had eighteen fine plants varying from 12 to 26 feet high. We had the misfortune to lose seventeen; but the eighteenth, being in a warm situation, escaped.

One of our plants was within 10 yards of a fine plant of *Aranea imbricata*, which withstood the frost, and is now doing well.

I think I have said enough to show that *C. macrocarpa* is not hardy enough to stand such winters as that of 1867 in all situations.—E. CHITTY, *Outlands Park, Walton-on-Thames*.

THE JOSÉPHINE DE MALINES PEAR.

THERE is a peculiarity in the tree of this charming and excellent Pear which cannot be too widely known—viz., its perfect and enduring health when grafted on the Whitethorn (*Crataegus oxyacantha*); so that any one possessing a good Whitethorn hedge may grow abundance of this valuable late Pear by selecting some clean stems and grafting them, so that the heads of the trees are clear of the hedge.

A tree now growing in a hedge on a hill of gravel close to the town of Hertford is now some fifteen or more years old, and it seldom fails to give some pecks of fine clean fruit, equal and sometimes superior to those from trees on Pear or Quince stocks. My attention was very recently drawn to some trees of this kind grafted on the Whitethorn, and growing in a stiff clay. To my surprise, I found the junction of the graft with the stock scarcely to be distinguished, so perfect is the union. The trees are remarkably clean and healthy, and bear very fine fruit. Unlike some kinds of Pears when grafted on this stock, the cores of my Whitethorn Joséphines are not hard, neither is their flesh gritty, but nearly always perfectly melting, and of a rich perfumed flavour. I have had thirty years' experience of this most distinct variety, and no winter Pear has varied so little in its character, and no late Pear in my opinion more deserves extensive culture. Every farmer with a healthy "quick hedge," as a Whitethorn is called in Essex, should train up some stems and graft them with Joséphines, and every industrious cottager should do the same. I fear it will not ripen well north of the Trent, but there are large districts in the warmer parts of England where it may be made a valuable product.

The only kind of Pear that succeeds well on the Whitethorn for a long term of years is the *Passe Colmar*, of which I know a tree some twenty-five years old; but this sort does not as a rule ripen well, although it bears abundantly. Joséphine de Malines is of the same race. Last season (1866), my fruit of this sort were in perfection all through March and April, 1867. This season they ripened towards the end of December. Such is the subtle influence of climate on the ripening of fruit, about which we as yet know so little.—T. R.

GLASS VERSUS BRICK WALLS.

A FEW weeks since Mr. Robson, in his article on garden walls, stated that 1000 square feet of wall would produce more fruit—say Peaches, than 1000 square feet under glass.

This assertion induced me to look into the question. On referring to Thompson's "Gardener's Assistant," I observe that he states twenty dozen of fruit from a wall Peach tree of a mature age are as many as a tree ought to ripen, although that number is often exceeded by injudicious cultivation to the great injury of the tree. We thus have a basis as to the produce of a wall tree, say seven years old, and in full bearing. A wall 10 feet high and 100 feet in length (1000 square feet), will give training space for five Peach trees, which will in the course of seven or eight years cover the face of the wall; and they will, or ought, in good seasons to give a hundred dozen of fruit.

We must now look at the 1000 square feet covered with glass. This space will give abundance of room for sixty fine Peach trees in 15-inch pots; at the age of seven or eight years these trees will each produce five dozen of fruit, giving an aggregate of three hundred dozen. On a wall protection from spring frosts would be required, and pruning and nailing in winter and summer. Against this work must be placed the watering and care required by the trees under glass. A 14-inch wall 10 feet high and 100 feet in length, would cost some £30

or £40 in excess of 1000 square feet covered with glass. Brick walls to enclose gardens are necessities, I have no wish to enter into that part of the question; it is the assertion of Mr. Robson that has caught my attention. It is, I think, worthy of some little consideration by cultivators of fruit.—INQUIRER.

THE ROYAL HORTICULTURAL SOCIETY'S SCHEDULES OF PRIZES.

I AM glad to see at last a plea put forward for more encouragement to amateur exhibitors at the Royal Horticultural Society's Shows.

The Council, composed as it is of amateur horticulturists, with an admixture of noblemen and gentlemen, representatives of the great body of the Fellows, cannot be suspected of a bias in favour of nurserymen; but it is very possible, notwithstanding, that amateur horticulturists may not receive their fair share of encouragement. The Council may, for instance, be of opinion that a greater number of plants will not be exhibited with a schedule such as "F. R. H. S." wishes; and those best acquainted with the art of making shows, including Mr. Eyles, believe that the richest exhibitions are procured by the system of large classes. Still, procuring effective shows ought not to be the only object to be aimed at in the exhibitions of a horticultural society; and it is most desirable to bring out the "greater amount and variety of talent and skill" which "F. R. H. S." believes will be the results of smaller classes.

It would, however, be interesting to know what professional horticulturists think of these schedules and of "F. R. H. S.'s" views, and especially what they think of the schedule for the Rose Show. In this amateur influence has, doubtless, had more weight than in the other schedules. It is always advisable to hear both sides of a question, and though I am not one of those who desire to be constantly meddling with the arrangements of those whom we have selected to manage our affairs, I submit that the Council would do well to invite discussion on this question, and thus either assure themselves that they have nothing more to learn in schedule-making, or else ascertain and correct their errors. In every society matters are apt to fall into a groove; and the arrangement of the schedules has, probably, fallen into the hands of one or two men who may, perhaps, have crotchets of their own, or who may not be advised for the best. I suggest, therefore, that the Council name one of the Tuesday Meetings, after the London season is over, for the free discussion of their schedules for the present year. We shall most of us be perfectly satisfied with the decision they arrive at when we are sure that they have all the requisite data for forming an opinion.—INDAGATOR.

MISTLETOE.

IN 1866 and 1867 I made a journey in the fowl districts of France, in order to study the varieties, &c., and was particularly struck with the exuberant growth of Mistletoe at Hondan (Seine-et-Oise), and at Le Mans and La Flèche (Sarthe). The trees at the roadside in these districts were literally covered with Mistletoe, and I was surprised that the parasitic growth in no way appeared to check the vitality of the trees.—H. L. F. C.

I HAVE seen it in its glory in the neighbourhood of Weobley, and other places in Herefordshire. Some of the finest specimens I ever saw were on some Poplar trees in the above locality, and at 15 or 20 yards from the ground. These could be seen miles from the place. In that neighbourhood I have seen the Mistletoe on Apples, Crabs, Thorns, Poplars, Limes, and I am not certain whether I did not see some on Willows, along with *Polypodium vulgare*.

With regard to finding it in the northern counties, it may be met with in the neighbourhood of Nappleton, a few miles from York. Not long ago I saw it at a place called Ormesby, among the far-famed Cleveland hills. Near the mouth of the Tees, a few miles from Redcar, I saw it growing in an orchard.—M. H., *Acklam Hall*.

SALVIA ON THE COL DE TENDA.—In your last impression, page 46, you ask if any of your readers recognise the *Salvia* your correspondent "D. S." saw on the southern slope of the

Col de Tenda. It is in all probability *Salvia violacea*, commonly called Purple-topped Clary; it grows here, and seeds itself very freely, also *rubra*, the Red-topped—two very old annuals rarely met with at the present time.—W. GRIFFITHS, *Guy's Cliffe, Warwick*.

A SIMPLE WAY OF GROWING EARLY RHUBARB, AND A QUESTION ON POTATOES.

I AM a poor man fond of gardening, and try to improve my knowledge by practical experience on a few hundred yards of garden ground. I was desirous of having a little early Rhubarb this year of my own growing. I tried one of Shirley Hibberd's plans two years ago, but failed; so this year, or rather in the first week of December last year, I took the bottom half of a broken earthenware bowl, 18 inches in diameter, and a cast-away "set pan" about the same size, and planted in each a large old Rhubarb root, shut them up closely in a recess near the kitchen fire on the oven side, and watered as required. I have to-day fourteen stalks of nice pink Rhubarb, and I am likely to have a great many more soon. Some of the stalks are 14 inches long, exclusive of leaf. As this is better than I expected, I thought many other poor readers of your Journal ought to know how to grow cheaply this delicate vegetable at this season.

And now, will any one of your numerous readers be good enough to give through your columns the names of one or two varieties of White Round and the same of White Kidney Potatoes that are really handsome, fit for any show table, and prolific as well? In trade catalogues almost every Potato has some remarkable quality ascribed to it, as a reason why it in particular should be bought, and as I cannot afford to test and try every kind, I am anxious to know which is best from those who have sought and found the above desirable qualities. In the beginning of last year I planted some Early Oxford (Soden's), and the few that grew to a size suitable to show—some two or three at a root, the rest, though very numerous, were only fit for pigs—were beautiful, and were awarded the first prize at a good show; but as I do not keep pigs, but have a family of children, I want to know of some more equally-tubered variety.—YORKSHIRE.

[We recommend you to grow the following Potatoes:—Coldstream Early, Daintree's Early, Lapstone Kidney, and Royal Kidney.]

WHAT IS A CORDON?

WHEN you made the statement "that M. Du Breuil introduced the word *cordon* to express certain modes of training which we have called 'the spur system,' in contradistinction to the laying-in system of pruning," I wrote to you in the interest of truth. I quoted the same author to show why he introduced the forms that go by that name, and how the word came to be so much used amongst French fruit-growers. I gave his own language, and indicated precisely where to find the passage, so as to guard against all possibility of mistake. You reply by stating that I have "most unfairly" quoted him; that I well know M. Du Breuil does not say what anybody who refers to his book can readily see that he does say; and that I have quoted just enough to "suit my own purpose." These are hard words, and if I deserved them I should be unworthy of an inch of space in your paper. I have the greatest contempt for anybody who misquotes an author for any "purpose," and if you do not acknowledge the injustice of your remarks on this point I shall be more surprised than I was at your statement of Jan. 2nd that, "cordon, therefore, does not mean any particular form of trained tree." (1) With this note the work from which you say I have quoted so unfairly shall be left at your office, with the passage marked in which M. Du Breuil says distinctly what you deny.

The clearest proof of what I assert is afforded at p. 323 of the latest edition (1868), of the author for whose definitions and labours you have such high and just respect. There he deliberately divides the various forms into two groups—one the large forms, such as the *palmettes*, *crantails* (fan-shaped), and *candelabres*, the other the "little forms or cordons." It is needless excess to state and to repeat, as you have done, that he "uses the word *cordon* generically and not specifically." As there are vertical cordons, oblique cordons, spiral cordons, horizontal cordons, and various other kinds of cordons, he must of necessity use the term generically. If your definition

be correct, M. Du Breuil would use the term *cordon* to express the spurred-in branches of any fruit tree. He does nothing of the kind, but uses the term *branch* just as we do, as I could prove to you from many passages in his works. Can you point out any proof in his book that he invented the term to express what we called "spurring-in?" The definition that you have given of the term is most certainly an exceptional one, as may be seen from the highest as well as lowest French authorities. In the instance which you give is it not stated that the tree is a *palmette* as regards the form? In that case the term is used in its exceptional sense; and in the new and excellent edition of Du Breuil which I now leave with you the name *cordon* does not occur in connection with the large and compound forms. The simple truth is, that the French would no more think of calling a tree *en cordon* because it had spurred-in branches than we should think of calling a revenue cutter a frigate because both vessels happened to be built of the same kind of wood! The term was used long before Du Breuil's day, and especially in connection with the Vine trained after a horizontal fashion, as expressed by M. Carrière, of the value of whose definition in connection with the present use of the term your readers may judge by his defining it as "every part of a plant trained a little horizontally," whereas many of M. Du Breuil's cordons are perfectly vertical, and perhaps the most popular form of all for walls is the oblique cordon.

With regard to the gratuitous footnote in your last, in which you offer me the meaning of the word *courson*, I have merely to remark that our correspondence has afforded me several opportunities of forcibly indulging in that kind of "reasoning" if I admired it, and to add that the *cordon* Peach trees in hundreds of French gardens have their side branches long and every one laid in! Does not this alone prove the value of your definition? As accuracy is desirable in speaking of such matters, I may add that this may be seen under glass in a long Peach house in M. Rose Charmeux's garden at Thomery, and in the open air in Baron Rothschild's fruit garden at Ferrières.

—ONE OF THE DISPUTANTS.

[We take the earliest opportunity of withdrawing the charge we made in our last against our correspondent of having unfairly quoted from M. Du Breuil's book just as much as suited his purpose. Our correspondent has sent us the last edition of the book, dated 1868, and there we find his quotation complete and perfectly correct. Our quotation, equally correct, was taken from the edition of 1860, and the edition of 1868 we had not then seen. The application, then, of the term *cordon*, so far as M. Du Breuil is concerned, resolves itself into an appeal "from Philip drunk to Philip sober." What M. Du Breuil considered a *cordon* in 1844, 1850, and 1860, he considers something else in 1868; for there is no shadow of doubt that, in this last edition of his book, he confines the application of it entirely to those simplest forms of trees consisting of a mere stem with spurs or *coursons*, and no ramifications on them, and the various kinds of which our correspondent so accurately describes in his present communication. What then is to be done? Are we to abandon the idea we have held for the last quarter of a century, and which was obtained from Lepère and Du Breuil, and follow the latter in his new nomenclature, or are we to hold fast by the old? For ourselves we shall adhere to the old until we see M. Du Breuil himself more decided in his application of the term than he even now is; for in this very edition he represents a tree, on page 346, with two parallel diagonal cordons, which on page 345 he calls an oblique *double cordon* tree. Then at page 480 (*fig. 336*), in the illustration of his *cordon oblique simple*, he introduces a tree with a perpendicular stem and *four* cordons upon it. If, then, M. Du Breuil can so accommodate his meaning of the word as to make it applicable to a tree of a single, a double, or even a greater number of cordons, then we decline to accept his last definition of a *cordon*, and fall back upon that much more rational and comprehensible one of M. Lepère and M. Carrière, which is that cordons are the secondary branches pruned close, and of which there may be as many on a tree as suits the convenience or taste of the cultivator.

In admitting the *double cordon* figured on page 346 as a *cordon* tree, we are at a loss to conceive by what process of reasoning can M. Du Breuil or his disciples refuse to admit a triple cordon also in that class. And if he cannot reject the triple cordon, how can he limit the number of cordons a tree shall bear to exclude it from being classed as a *cordon* tree?

But there is no reason why we should confine ourselves to the French idea of what should constitute a *cordon* tree. The word itself is good English, from a Welsh root, *corden* being

the term in that aboriginal language having the signification of a rope or string; and as there seems so indefinite an idea as to what constitutes a French *cordon* tree, let us have a nomenclature of our own, based on the rational principle that a *cordon* being a continuous simple branch issuing directly from the stem, and close-pruned, trees trained on that principle can be distinguished in specific terms by which each form may be known. In our present number Mr. T. F. Rivers has made a very successful essay on the subject, and one which may be accepted as sufficient for the purpose of fixing a *cordon* nomenclature.]

ROYAL HORTICULTURAL SOCIETY.

JANUARY 21.

FLORAL COMMITTEE.—The exhibition of plants on this occasion was limited, but some of those produced were of considerable interest. Mr. Wiggins, gardener to W. Beck, Esq., of Isleworth, received a special certificate for a numerous and most beautiful collection of Cyclamens, the strong robust plants composing which, though little more than fourteen months old from the seed, that having been sown on the 14th of November, 1866, were profusely covered with large and fine flowers. Mr. Wiggins is well known as a very successful cultivator and exhibitor of Cyclamens, and fine as these were, we may expect yet finer from him in the course of the spring. Some particulars as to his system of managing this highly ornamental plant were given in our pages in a notice of one of the exhibitions in the early part of last year. A special certificate was also awarded to Mr. Wiggins for a collection of Chinese Primulas of a very fine strain. They were in beautiful bloom, and some of the flowers measured fully 2 inches in diameter.

From Mr. Salter, Versailles Nursery, Hammersmith, came a collection of cut blooms of the new Japanese Chrysanthemums, which have already been more than once noticed as exhibiting a variety of curious forms, and which are likely to prove very useful for conservatory decoration, especially as they will yet continue in bloom for six weeks. In colour the blooms sent were white, yellow, bronze, and lilac. A special certificate was awarded for the collection. A similar award was made to Messrs. F. & A. Smith for a collection of Tricolored Pelargoniums. Mr. Wills, Huntrope Park Gardens, also sent a small basket of Beauty of Calderdale, which though good for this season, was not in a condition to show its full beauty. It was accompanied by the following note:—"My object in sending the plants up at this early season is to show the value of the Bronze and Gold Zonal Pelargoniums for conservatory decoration during the winter months. The plants sent will show how well they keep their colour during the dull season of the year. For the last three months they have had scarcely three hours' sunshine on them. Some large plants I have of Beauty of Ribblesdale, Beauty of Calderdale, Perilla, Model, Her Majesty, and many others have been flowering very freely all through the winter; the flowers they produce are of fine shape and substance, and the trusses large and of fine outline. When we take into consideration the beauty of the foliage and the richness of the flower as well, and their adaptability for winter decoration, I think it will be admitted by all that they are a most valuable class of plants, suitable alike for bedding-out purposes in the summer, and for conservatory decoration in summer or winter. Even the winter storehouse may be made to assume a very gay and neat appearance by judiciously intermixing the Silver Tricolor and light and dark green Zonal Pelargoniums with these beautiful varieties. I have no doubt the Bronze and Gold Pelargoniums will be very extensively used for all of the above-named purposes as soon as they become more generally known."

Mr. Green, gardener to W. Wilson Saunders, Esq., received a special certificate for a small but very interesting collection of rare plants, including Monacanthus Henchmanni, from Bahia, with very singularly-shaped greenish yellow flowers; Goodyera discolor, with seven very ornamental spikes of flower; Oncidium abortivum, a botanical curiosity; Colubaria trichroma, figured and described in the "Botanical Magazine" of the present month, by no means a new plant, however, though rarely seen; likewise a very ornamental Adiantum from Brazil, and Anthurium species from Bahia, with glossy leaves 9 inches in length by 6 in width at the broadest part, and of which the foliage is even more ornamental in a younger state, having then a copper hue. Messrs. Backhouse, of York, had a special certificate for a small collection of Orchids, consisting of Odontoglossum Hallii from the Andes of Ecuador, with richly blotched flowers; Lælia albidula, Odontoglossum nebulosum, very pretty, white spotted with brown; and the little bright-coloured O. roseum. Mr. Standish, of the Royal Nurseries, Ascot, sent two well-bloomed specimens of Lælia furfuracea; and Mr. Sherratt, gardener to J. Bateman, Esq., Knypersley, a very fine and beautifully coloured cut spike of Renschanthia coccinea; also Ipea speciosa, from Ceylon. For these a special certificate was awarded, and one was also given to Mr. Hodges, gardener to E. Wright, Esq., Gravelly Hill, Birmingham, for a small collection of cut Orchids. The same exhibitor also received a first-class certificate for Lælia anceps Dawsoni, a fine variety.

Mr. F. R. Kinghorn, Shiehn Nursery, Richmond, again sent the Japanese Juniper and Thuja, from Nagasaki, which had been shown

at the December meeting, but the Committee deferred coming to any determination respecting them for the present.

Mr. R. Weatherill, nurseryman, Finchley, sent two new varieties of *Solanum*, the result of a cross between *S. hybridum* and *S. pseudo-capsicum*, and named respectively *S. pseudo-capsicum* Weatherilli, and *S. pseudo-capsicum rigidum*. To each of these, on account of the size, abundance, and ornamental character of the fruit, a first-class certificate was awarded. The variety called *rigidum* is very compact and erect in habit. A special certificate was also awarded Mr. Weatherill for a collection of *Solanums* finely fruited.

Messrs. Backhouse also contributed several specimens of Beet with ornamental foliage, similar in colours to those shown by Mr. Salter at previous meetings.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Mr. Higgs, gardener to Mrs. Barchard, Putney Heath, sent a seedling Apple of more than average size, ovate shape, and of a fine golden yellow colour, prominently ribbed on the sides and round the eye. The Committee considered it a good kitchen Apple. Mr. Carter, gardener to W. Brookes, Esq., Mistley, Essex, sent an Apple he found there, and which was raised by one Adam Scott. It is of good size, roundish or cylindrical in shape, and with a brownish tinge on the side next the sun. The flesh is yellowish, tender, and with a flavour resembling that of the Blenheim Pippin. It was considered a good dessert Apple, but not superior to other varieties now in use. Mr. R. Fenn, of the Rectory, Woodstock, exhibited a dish of Cox's Orange Pippin in fine condition and of excellent colour; the flesh was tender and of good flavour. Mr. Stewart, of the gardens, Nuneham, sent fruit of Ribston Pippin, also in fine condition. These two dishes exhibited great skill in the preservation of the fruit. Mr. Fenn also sent a dish of Knight's Monarch, which were beautiful samples of that variety. Mr. Tillery, of Welbeck, sent a fine dish of Winter Nellis, the fruit being very large, and so well kept they were still not quite ripe.

Mr. Fairbairn, of the gardens, Sion House, Isleworth, exhibited two specimens of Cocoa Nut grown in the gardens of the Duke of Northumberland there. They were perfectly ripened, and one was full of milk. The Committee awarded them a special certificate, and recommended the exhibition to the Council as a proper object on which to bestow any medal they may have at their disposal. The Council determined to award Mr. Fairbairn a gold Banksian medal.

Mr. Stevens, of Trentham, sent a dish of Black Hamburgh and one of Lady Downe's Grapes, both of which were fine specimens of their varieties. Mr. Tillery, of Welbeck, sent dishes of West's St. Peter's, Trebbiano, and Alicante; and Mr. Standish sent small bunches of Royal Ascot. The bunches of Mr. Stevens were unusually fine at this season of the year; and Lady Downe's was considered superior in flavour to the Black Hamburgh, and a special certificate was awarded them. The Royal Ascot, being fresh Grapes, were not put in competition in regard of flavour, but the flavour was much fresher, and by many who were present they were considered superior to the others.

A large collection of fruits from Canada, consisting principally of Apples and Nuts, was exhibited by Mr. W. T. Goldsmith, Millmay Road, Stoke Newington. Black Gilliflower is a long dark fruit, with tender flesh, and good flavour. King of Tomkins County, a large handsome Apple, was also of superior flavour, and with a fine firm flesh. Rhode Island Greening was firm in flesh, and had fine flavour. Baldwin had tender flesh, of good flavour, but rather musty from being in contact with straw. Green Pippin was tender in the flesh, but past. Yellow Bellefleur is a very nice Apple, with a fine delicate flavour—a delicious Apple. Wagener is a fine Apple of excellent flavour, and with a peculiar aroma. *Æsopus Spitzenberg* was also fine. Of *Pomme d'Api* the fruit was small, and not remarkable for flavour. Grantham Sweet was not remarkable for flavour. Twenty-ounce was tender-fleshed, but not of much flavour, being already passed. Norton's Melon is a good firm-fleshed Apple, but with not a great deal of flavour. Northern Spy was so musty from being in contact with straw as to be disagreeable. The Nuts consisted of Black Walnut, Hickory Pig Nuts or Large Hickory, and Chestnuts. The Committee awarded a special certificate. Mr. Goldsmith also exhibited tins of preserved Peaches and preserved Tomatoes, and a bottle of Tomato jam. The Tomatoes and Peaches were very fresh and excellent, and the Tomato jam was most delicious. A special certificate was also awarded to the jam. Mr. Pottle, of Little Bealings, exhibited his patent Cucumber box, which the Committee considered was useless. A box of very fine fruit of the Guava was received from Mr. Taplin, of Chatsworth; but it came too late for the meeting.

GENERAL MEETING.—G. F. Wilson, Esq., F.R.S., in the chair. The meeting was purely of a formal character. Eight new Fellows were elected, and the proceedings closed with the Chairman's announcing that the Annual General Meeting would be held February 11th, at 3 P.M.

SOLANUM CAPSICASTRUM.

THIS is one of the most useful plants for conservatory decoration during the winter season, especially plants of it the second or third year from seed. I planted-out some one-year-old plants last May; they flowered and set fruit freely. I took them up in October, potted them, kept them in a close pit till they commenced rooting freely, and they are about 8 inches

high, with about a hundred berries well coloured, making them perfect gems for table decoration.

Visiting Mr. Weatherill's nursery a few days ago, my attention was drawn to a *Solanum*, a cross between *hybridum* and *capsicastrum*, in habit a little like *hybridum*, but much superior, being darker in the foliage; consequently the contrast between the berries and the leaves is much more distinct. The berries, too, are much larger than those of *hybridum*, and much higher-coloured.—T. N.

NOTES AND GLEANINGS.

WE are informed that the following changes in the Council of the Royal Horticultural Society will be submitted to the General Meeting of Fellows on the 11th of February:—Lord Sandon, Mr. W. W. Buller, and the Rev. Joshua Dix retire, and their places are to be filled by Mr. J. Russell Reeves, Mr. W. Marshall, and Mr. John Clutton. That these gentlemen will be generally acceptable to the Fellows there can hardly be a doubt; the names of Mr. Reeves, and of his father the late Mr. John Reeves, have been so early and so intimately associated with the Horticultural Society and with horticulture, that no more fitting person could occupy a place on the Council. Holding a high position of influence in the East, to one or other of them our gardens are indebted for some of the earliest and best introductions from China. Among these are the *Wistaria sinensis*, the Chinese Primrose, and numerous kinds of Camellias, Tree Peonies, Chinese Azaleas, Chrysanthemums, &c.; and all these were procured at a time when the country was sealed against Europeans. As a successful cultivator of Orchids, and a liberal patron of gardening, Mr. Marshall comes with a fitting qualification; and Mr. Clutton's well-known business habits and shrewd counsel, qualify him to reoccupy the position he a few years ago resigned.

MANY of our readers will be pleased to hear that Mr. Rose, who, we announced, had been appointed to succeed Mr. Ingram at the Royal Gardens Frogmore and Windsor, is Mr. Hector Rose, gardener to his Grace the Duke of Roxburgh, at Floors Castle, N.B. Mr. Rose was previously under Mr. William Thomson, at Dalkeith Park, where he so distinguished himself in the position of foreman, as to justify Mr. Thomson in recommending him to Floors. That this recommendation was merited is now fully proved by the appointment which has recently been made.

CHARCOAL FOR HAY'S STOVE.

LIKE many of your correspondents, I have been disappointed in not being able to procure peat charcoal, and so last spring I was induced to try common charcoal, and was much gratified to find that it answered even better than peat charcoal, giving out more heat. Its price is, I believe, a little above that of the peat. I have, however, recently purchased some from a charcoal burner living at Datchworth, near Welwyn, Herts; his price is from 1s. to 1s. 3d. per bushel, according to the quantity ordered. I regret I cannot give his name, but I should suppose there are not many professors of the grimy occupation in the small village I have named, and so perhaps this address—"The Charcoal Burner, Datchworth, near Welwyn, Herts," may find him.—T. R.

OTIORHYNCHUS VASTATOR.

CURTIS, in his work on the insects injurious to the farm, says this beetle cannot fly. It seems so contrary to what we might expect, to find a beetle with elytra fully formed without the power of flight, that I felt quite unable to accept the fact without investigation. Having nothing but dried specimens to examine, it appears to me that the elytra are joined together, and that there are no true wings under them. Would the Professor who so kindly answers our inquiries be good enough to let us know what we ought to find when we know how to look? There are so many persons who have suffered from the attacks of the larvæ of this and its allied beetle, the *Otiorhynchus sulcatus*, which are known to gardeners by the name of ringers, that any information will be welcome.

Many persons who have had young Vines, Rhododendrons, Azaleas, Yews, Camellias, &c., destroyed by these grubs, which remove the bark from the stem just below the ground, do not know of what insects they are the larvæ; others who have

seen the eyes eaten out of their standard Roses and young fruit trees, or who have seen the shoots and leaves of their young Vines eaten, either do not know the cause, or, if they are acquainted with the beetle, do not know it as the parent of the ringer. These are the reasons why I think a good paper on these destructive weevils would be so useful.

It appears to me that what gardeners want, is a cheap liquid to kill the grubs in the soil, without being injurious to the plants. The grubs are now in a young state in warm houses feeding on the roots or stems; later in the season they will be found out of doors. If plants could now be watered with some liquid such as I have indicated, the mischief would be prevented. As these insects particularly affect peat soil, such liquid must not contain lime, which not only destroys peat, but is injurious to most plants which grow in peat. As soon as I have an opportunity I shall try Fowler's insecticide, to see if it will kill the grubs in soil. Some time ago, as a preliminary trial, I soaked a Camellia and an Azalea by letting the pot stand in a vessel of this preparation for some minutes, and the plants appear quite uninjured; so if it will kill the grubs when surrounded by soil it may answer the purpose.

If the above few remarks direct attention to these injurious insects my object will have been gained.—J. R. PEARSON, *Chilwell*.

PROTECTING TREES FROM RABBITS.

IN your number for December 26th "MONTICOLA" is at a loss to account for rabbits, and he might have added hares, always attacking plants newly put out. Surely he himself supplies the solution when he says, "No rabbit will touch growing trees if it can find a prostrate one at which to nibble." The check to growth given by planting-out is no doubt the same in kind, though less in degree, as that which follows cutting-down. He will probably find mixing grease with gas tar for smearing the stems a good plan; it prevents the tar from cracking and peeling off. In the Duke of Sutherland's plantations at Trentham I used to see three or four small sticks dipped in tar set close round the young trees, and we have tried the same with good effect. It appears that the rabbit, like the rat, with which the Germans generally couple it, avoids soiling its fur with tar, or perhaps it dislikes the smell. By this plan all injury to the plant, by smearing its stem, is avoided.—J. P. O.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

CATTLEYA AMETHYSTOGLOSSA (Amethyst-lipped Cattleya).—*Nat. ord.*, Orchidaceæ. *Limn.*, Gynandria Monandria. Native of Brazil. Lips reddish purple, and petals and sepals spotted with the same colour on a white ground.—(*Bot. Mag.*, t. 5683.)

COTYLEDON VELUTINA (Velvety-leaved Cotyledon).—*Nat. ord.*, Crassulaceæ. *Limn.*, Decandria Pentagynia. Native of South Africa. Flowers pale green at the base with yellow above, and the limbs edged with crimson.—(*Ibid.*, t. 5684.)

VITIS PLANICAULIS (Flat-stemmed Vine).—*Nat. ord.*, Vitaceæ. *Limn.*, Tetrandria Monogynia. Native of the Sikkim Himalaya.—(*Ibid.*, t. 5685.)

COBURGIA TRICOLORA (Tricolored Coburgia).—*Nat. ord.*, Amaryllidaceæ. *Limn.*, Hexandria Monogynia. Native of the rocks of the Peruvian Andes. Flowers scarlet outside, pink inside, and limbs of corolla purple.—(*Ibid.*, t. 5686.)

OPHELIA ALATA (Winged Ophelia), *O. ANGUSTIFOLIA* (Narrow-leaved O.), *O. PANICULATA* (Panicled O.).—*Nat. ord.*, Gentianaceæ. *Limn.*, Pentandria Monogynia. Natives of the colder regions of the Himalaya. *O. alata* has greenish yellow flowers spotted with purple. *O. angustifolia*, flowers purple spotted with blue; and *O. paniculata*, flowers white with semilunar purple band in the middle of each lobe.—(*Ibid.*, t. 5687.)

BEGONIAS Veitchii and *rosaeflora*.—Both these species are, it will be observed, dwarf herbaceous plants; and even if it should prove that, whilst enduring the cold, they require some slight protection against the vicissitudes of our variable climate, we must welcome them as amongst the most valuable and important of recent acquisitions, since they are not only remarkable for the size and beauty of their blossoms, but also for the facility with which they may be cultivated. Both are natives of the Andes of Peru, and grow at an elevation of from 12,000 to 12,500 feet.

"Though presenting a certain amount of similarity in their

aspect, the two sorts are abundantly different both as to foliage and flowers. *B. Veitchii* has thick concave leaves of an obliquely ovate or roundish cordate outline, two-flowered scapes 8 to 10 inches high, and large flowers of a bright cinnabar red colour, one being female and rather smaller than the male. *B. rosaeflora* has also thick concave leaves; but they are of a more rounded outline, with much deeper basal lobes, and the veins are so deeply impressed as to render the surface bullate; while the scapes, which are red, like the petioles, are three-flowered; and the large flowers are of a clear rose colour, one of the three being female. They are thus abundantly distinct as decorative plants, and out of bloom have more the aspect of some broad-leaved Saxifrage, such as *S. ciliata*, than that with which we have hitherto been familiar amongst Begonias."—(*Florist and Pomologist*, 1868.)

FRONTIGNAN GRAPES.

I RECOMMEND Mr. Tillery (see page 2), to add Primavis [Early White Frontignan], to his other Grapes, which succeed perfectly well without fire heat. I also grew this year with it the Early Smyrna. The last is the most musky and the best of the race that I have tasted. The former is musky, the largest in berry of the race, and very good. I have added three more of each, and also one each of Foster's White Seedling, Early Golden, Early Silver, and Chasselas Musqué de Sillery. The first two and last three are Frontignans. I believe Foster's White Seedling is a Muscadine or Sweetwater. I recommend persons with orchard houses and cool vineries to buy some of these delicious Grapes. Mine were grown in 15-inch pots with a surface dressing of fresh-dropped cow dung, which they seemed to like.

My little stock of Grape Vines now consists of two Black Hamburgs, or rather Frankenthal, and the above Grapes. I will describe, if permitted, in the autumn, the Early Golden, Early Silver, and Chasselas Musqué de Sillery, for Mr. Tillery's information. Foster's White Seedling and Early Smyrna I see are in his list.—W. F. RADCLIFFE, *Okeford Fitz-paine*.

CORDON TRAINING.

THE introduction of the system of training fruit trees, called by the French cordon training, leads me to suppose that a few outlines of description may not be unacceptable. This system of training is remarkable for simplicity, and I propose to give the necessary directions in as few words as possible.

The preparation of the ground is so well understood, that it is not necessary to say much on this point. To form the oblique-cordon orchard, a trench should be dug about 2 feet wide, the first spit of soil being thrown out as if for a Celery trench; the under spit should then be broken up and left with the top soil, a good proportion of well decomposed manure must be mixed, and the ground is ready for planting. The trench should, if possible, be made about a fortnight before planting, in order that the soil may be thoroughly pulverised. If there is any deficiency of lime in the soil, it is as well to add lime rubbish or chalk. For horizontal double cordons a trench is not necessary; holes should be dug about 2 feet in diameter, and the soil mixed with good compost. The double-cordon trees should be from 12 to 15 feet apart; the horizontal single cordons 6 to 8 feet. At this moment there are at Sawbridge-worth two horizontal double-cordon Peach trees, under a ground viney, which measure 21 feet from end to end, and promise, from their remarkable vigour, to be models of cordon culture next year, every spur being full of strong fruit buds.

Fig. 1 represents a double horizontal cordon. This may be made by cutting down a dwarf maiden tree to within four or six buds of the base, the two topmost buds of which must be selected to form the cordons. The highest on the stem are the most eligible; but the operator can, of course, select the two shoots which are the most convenient for his training wire, and they should be as nearly as possible opposite. When sufficiently advanced in growth to be flexible, they should be carefully bent down and fastened to short sticks, unless the training wires are used. As the whole energies of the tree are directed into these shoots, they will make rapid growth, and as they advance fresh sticks and fresh tying will be necessary. As any lateral or upright shoots are put forth they must be stopped at four or five leaves from their bases. The first year few of these will be made, but the tree will most probably, if there is a favourable growth, be studded with fruit buds. In

November, or, indeed, any month from November to March, the tips of the main shoots should be shortened three or four buds from the ends, and unless a few lateral shoots have been

left, which should be removed, the pruning for the first year will be accomplished.

The second year each cordon, or branch, will produce many

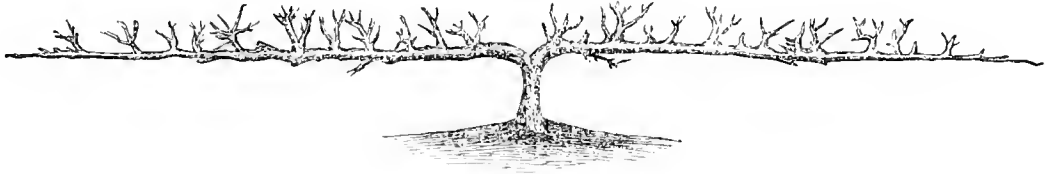


Fig. 1.

lateral shoots, and as these are successively produced they should be pinched. The first pinching must be done when the shoot has formed five or six leaves, and, as a general rule, three leaves from the leaflets should be the stopping point. This primary shoot will form the bloom buds, and the shoot made from the terminal bud must be stopped in the same

manner as the first. During the summer many of these growths will be made, and pinching should continue until the end of August. After this month pinching should be discontinued, and the remaining growth left for the winter pruning.

The tree after the second year will assume the appearance of a cordon—*i.e.*, a thick rope of closely-studded shoots, and

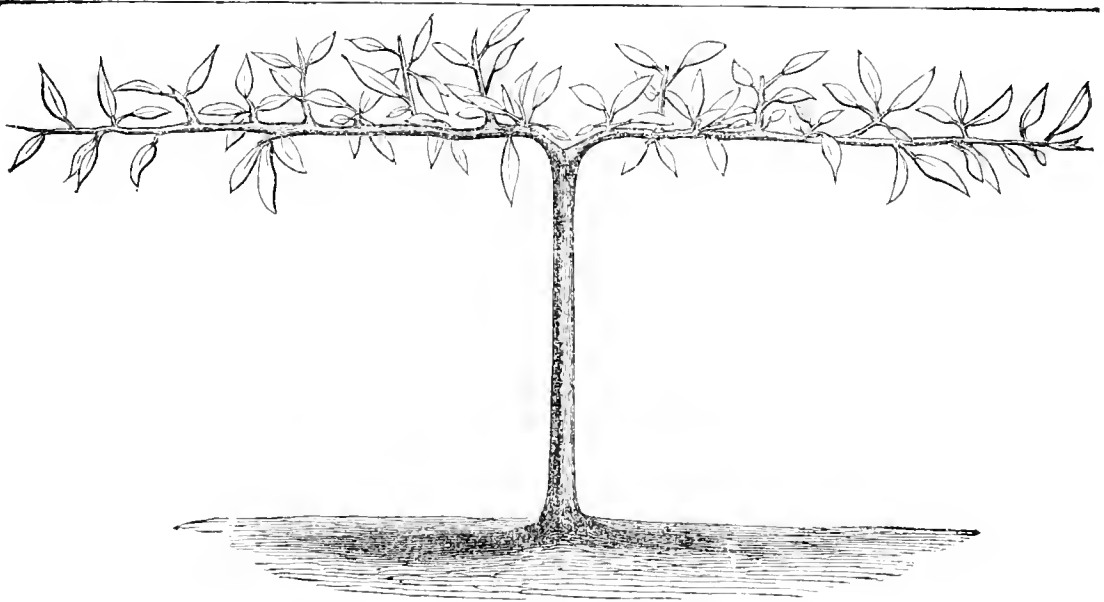


Fig. 2.

the pruning must be left to the judgment of the operator. Many shoots must be removed; and as the size and strength of the tree must regulate the number of fruit-bearing spurs, a sufficient number of these being left, the operator should prune all others to wood buds, in order to produce year by year an alternate succession of fruit-bearing wood.

Fig. 2 is a half-standard double horizontal cordon. This is very useful for low walls in gardens; where the border is occupied by flowers or other plants the part of the wall exposed to the sun may thus be used. A standard cordon with a stem 6 feet high may also be used for the top of a wall, the main surface being occupied by other trees. A cordon fringe, or cornice, will be

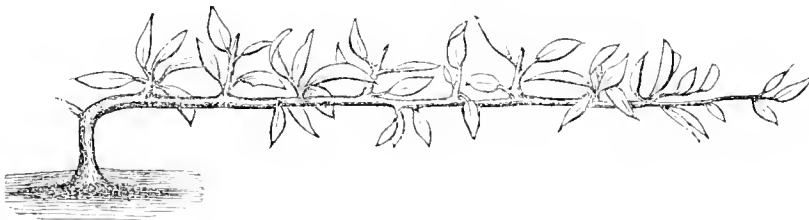


Fig. 3.

found exceedingly ornamental, and may be carried the entire length of a wall, the standards being planted at intervals of 20 feet or more.

Many other forms of cordon training will, doubtless, be discovered as the system becomes better known.

Single horizontal cordons (*fig. 3*), require the same pruning as the double, but the dwarf maiden tree does not absolutely require the cutting-back necessary for double cordons. The tree may be planted in a slanting position, against the train-

ing wire, and the shoot tied down. The first year after planting most of the buds will break and produce shoots; these must be treated in the same manner as the double horizontal cordons. If a single cordon is required for a special height, the shoot should be shortened to the height required, and a single horizontal shoot selected to form the cordon.

Single oblique (*fig. 4*), cordons may be planted to training wires by the sides of walks, or in rows in the garden devoted to their cultivation. The space given up to them will yield an ample

and quick return in fruit. They may be planted $1\frac{1}{2}$ foot apart, and if the cultivator does not object to wait a year, dwarf maiden trees are the best to plant, as they may be bought cheaply. The trees should be planted upright, and the shoots, which are generally very flexible, should be bent to an angle of about 45° . It is not necessary for the angle to be quite acute; but, as a general rule, this angle may be adopted. If the shoots are not flexible enough to bend, plant the tree in a slanting position.



Fig. 4.

The principle of pruning given for double horizontal cordons must be followed in the cultivation of single oblique cordons. They will the first year after planting be found covered with bloom spurs. Single oblique cordons in rich and fertile soils will, probably, require root-pruning as well as spur-pruning, and, if necessary, this should be done every second year. The tree should not be taken up, but the spade pushed down at a sufficient distance from the stem to avoid injury to the main roots, and the tree gently heaved. If a tap root has been made it should be cut. The proper time to perform this operation is near the end of October, and any time afterwards to the middle or end of February; but it is better done in October and November, as many fresh shoots will be formed after the operation, even during what are called the dead months of the year.

Single oblique cordons may be carried to the height of 10 or 12 feet; in fact, there is no limit, except the will of the planter. A fresh string of wire may be added annually as the cordons increase in length. They may also be limited to the height of 4 or 5 feet.—T. FRANCIS RIVERS.

(To be continued.)

REVIEW.

The Gardeners' Year-Book, Almanack, and Directory, 1868.
By ROBERT HOGO, LL.D., F.L.S., &c.

This is the ninth year of this excellent manual, and, if possible, it improves on its predecessors. It contains the most of the general information usually supplied in almanacks—as, transfer and dividend days at the Bank, assessed taxes, regulations as to income and property tax, receipts, agreements, &c.; arrangements as to the Post Office, money orders; British and foreign monies, weights, and measures; London market fruit and vegetable measures; useful tables for wages, interest, and housekeeping purposes; also tables showing the contents in gallons of tanks whether round or square; tables for ground-work, cost of digging, trenching, excavating, according to the character of the soil; tables for sowing, planting, and the quan-

tity of plants or seeds wanted per acre; also tables for ascertaining the average weight of produce per acre; and finishing by giving rules for changing the scales of the different kinds of thermometers into each other. Fahrenheit's thermometer is the one chiefly used in this country; but as Réaumur's and the Centigrade are much used on the Continent, it is of importance to know exactly how the different thermometers stand in relation to each other.

The book, besides, has three distinguishing features: First, a list and description of new and notable fruits; a list and description of the new plants figured, described, or exhibited during the past year, the descriptions being as full as possible; and the new flowers of the year, with certificates awarded to them, embracing *Antirrhinums*; *Auriculas*, alpine and show; *Azaleas*, *Camellias*, *Carnations*, *Chrysanthemums*, *Cinerarias*, *Clematis*; *Dahlias*, fancy, bedding, show; *Fuchsias*, *Gladioli*, *Gloxinias*, *Hollyhocks*, *Hyacinths*, *Lebelias*, *Pansies*, *Pelargoniums* of all sections, occupying about eight closely printed pages, *Pentstemons*, *Phloxes*, *Roses*, *Verbenas*, &c. This part of the book seems to have been done with great care and fullness, and is to many of us a very great advantage, as we are thus enabled to see in imagination many of the beauties which we will never be able to look at or handle physically. In the first division connected with new or notable fruits, outlines are given of the Grand Duke Constantine Apple; and of *Beurré de Beugues*, *Bergamotte de Millepieds*, *Beurré de Jonghe*, *Emile d'Heyst*, *General Todleben*, and *Madame Appert Pears*.

The second feature is the garden directory. The horticultural directory used to be the grand feature of this serial; but it became impossible to compress all that was necessary to meet the wishes of nurserymen and societies in one serial, and this season it has here been confined to a garden directory, giving the names of the principal gardens, names of proprietors, names of gardeners, and the nearest post towns, in the counties of England, Scotland, and Ireland. So far as we have been able to examine, this list is more full and complete than that given last year. In the enlarged horticultural directory to be published in March, the nearest railway station to the gentleman's residence and the distance from that station will also be given; and though we have no doubt that that directory will be as cheap at 2s. as this Year-Book is at 1s., still, if this garden directory is to form a part of the Year-Book in future, we should like the railway stations and their distance from the gardens to be given, even if some things else which appear year after year were left out. We have often been sadly disappointed when, on arriving at a railway station, we found we were many miles from our destination, and no way of reaching it except walking it or hiring—and hiring is a serious affair in country places in England. In such matters Ireland beats us hollow. We have paid as much to be driven a few miles in England as we have had a car for a whole day in Ireland.

The third feature is, in this year, an excellent out-door gardening calendar for every month in the year. Last year there was no calendar. In the three years previously there was respectively a kitchen-garden calendar in 1864, a flower-garden calendar in 1865, and a fruit-garden calendar in 1866, and there were calendars in the two first issues of 1860 and 1861; but the present out-door calendar of 1868 is the fullest and best that has yet appeared. We presume that next season there will be an in-door calendar; and then there will be a few seasons without a calendar at all—a matter of no great importance to those who keep the serial as we do as a book of reference. In short, our opinion is, that the faithful description of new fruits, plants, and flowers, and the garden directory, are the features of the work; and to make either of these more efficient we would excuse the want of the calendar now and then, most excellent though the present one is.—R. F.

HOME.

WHAT myriads of associations, some painful, others joyous, cluster round this single word, for after all, "no matter when or where," "there's no place like home." To one long an exile and a sojourner in foreign lands, release from "that wasting pang, heart sickness," as good "WILTSHIRE RECTOR" expresses it, is indeed joyous. None but they who have undergone the torture can fully appreciate the blessings a lifelong residence at home conveys.

A year ago at a choral meeting in a simple Canadian church, I met an English gentleman, who had taken American orders, and was then the incumbent of an American church in the far

west, in the State of Wisconsin. He took a very prominent part in the service, and joined so heartily that he was noticed by all. At a pleasant *réunion* in the afternoon, during conversation with him, he unburdened himself, and said to me, "I begged Mr. —," mentioning our clergyman's name, "to let me take part in the service. I wanted so to pray once more for my Queen and my country—my home!" And so he did, and with a fervour unknown to those who had never experienced "heart sickness."

"WILTSHIRE RECTOR" is correct in his belief that this is no time for emigrating. Sixty thousand men are now lying idle, aye starving, in the city of New York alone, and the horror of an almost Arctic winter aggravated by want and misery, may well make one tremble at the mere contemplation. The English labourer and mechanic, although they have their trials and troubles, are far better off and happier at home than they would be in any colony or foreign land. The colonies offer but a poor field for the gardener, and the farmer finds he has again to learn everything, and in the majority of cases his experience is dearly bought. My advice is—and it is the advice of one who, to use an Americanism, "has been through the mill"—STAY AT HOME. Practice economy; but above all, cultivate a contented mind. The dreams of fortunes to be made by emigrating seldom prove realities; and many a poor heart that otherwise might now have been beating, has throbbled its last in misery, uncared-for and unknown, a stranger in a strange land.

It is true that we of the Journal fraternity have a tie which mutually binds us to each other, and which makes home seem nearer to the dweller in far-off countries; and although it is pleasant to exchange courtesies, and to stretch hands to one another across a broad ocean, yet it is pleasanter still to drop into 171, Fleet Street, as I have lately been privileged to do, and to shake hands personally with the highly esteemed Editors of "our mutual friend."

And now one word about "errant writers." "Although science and direct instruction come from other pens," who among our circle would be willing to lose "NAUD," or "WILTSHIRE RECTOR."

"All work and no play
Make Jack a dull boy."

And although we all admire and enjoy the exemplification of "The Theory and Practice of Horticulture," as set forth by the host of scientific and practical contributors to the Journal, yet would not some of its brightest pages be wanting were the "errant writers" to discontinue their favours, and much moral instruction be lost?—W. T. GOLDSMITH.

VISITS TO GARDENS PUBLIC AND PRIVATE.

MESSRS. CARTER & CO., CRYSTAL PALACE NURSERY, FOREST HILL.

It was on the day of the Crystal Palace Autumn Exhibition that, through the kindness of the Messrs. Carter, I was enabled to take a look over their grounds. September is not at any time the best month in the year for seeing gardens, still less so was it last year; but notwithstanding this, and that the firm had sent a large stand of plants to the Crystal Palace, there was abundance to recompense one for the visit. I was accompanied by Mr. Boston, the manager; and I can only say that if any visitors to the nursery could get him to tell them his own history, they would come away, as I did, heartily admiring the perseverance and determined energy which had characterised it. He could tell them of Italy under the old régime, and of the Crimean war; and I would ask no better incentive for a young man than the success which has attended him by adhering to the principle of using every fair and honest opportunity of improving his position.

It would be needless to attempt a description of the nursery, for it is similar in its outward appearance to many others near London. There are several large greenhouses, a stove, and pits, with a large space out of doors devoted to the hardening-off of bedding plants, the object being to make as much of the space and in as short a time as possible; and as the market gardener pushes on to see how many crops he can obtain from the ground, so here it is how many crops in pots can be obtained out of the houses. There is a house 130 feet long by 18 feet wide, which was filled with about 800 Vines in pots, well-ripened excellent canes of the very best kinds, a large proportion being the Black Hamburgh—after all, perhaps, the most useful Grape we have; but in the spring this house was filled with 120,000 pots of bedding plants, among them

about 10,000 plants of Mrs. Pollock. Another house, holding about 400 Vines, had formerly held about 60,000 pots (60's). The plan here is to plunge the pots in spent hops, which afford them moisture, and do not harbour vermin.

Bedding Pelargoniums, which are every year driving other bedding plants out of the field, are largely cultivated, and the race for new varieties bids fair to open out fresh fields of beauty. In this race the Messrs. Carter are not behindhand, especially in the more select class of Tricolors and Bicolors; in the former they have two sweetly pretty plants—Titania and Oberon, while Red Gauntlet is a striking plant. They have, moreover, in their Prince of Wales a plant which, if it bear out the promise it has given as a seedling, will be one of the very finest Tricolors ever raised. The leaf is very large and most vividly marked, while the habit of the plant is of the most luxuriant character. Again, in the class of Bicolors, there is one here which, the moment I saw it, struck me as being the very best of its class that I had seen. This variety is called Egyptian Queen, and is to be sent out in May. It has a bright yellow ground, with a beautifully marked bronze zone, which gives it a most striking appearance. It begins now to be felt that most probably these Bicolors will be more serviceable as bedding plants than their more refined neighbours the Tricolors. I can quite conceive what a grand display a bed of Egyptian Queen must make. It has, too, such a thickness of leaf, that it cannot fail to be, as it has been proved this summer, one that will stand weather a great deal better than most of its competitors. Another very beautiful variety is Madeleine Schiller; while Dr. Primrose, with a plain yellow leaf, is also excellent. Of course, all the best varieties of other growers are to be seen, and in large quantities; but my interest was mainly in those sorts which are peculiar to this establishment.

There is the nucleus of a good collection of Orchids here, and a plant of *Phalaenopsis amabilis* was as fine a specimen of good culture as I have seen anywhere. Here also I noticed a nice collection of a charming little plant which every one ought to have—the curious little Australian Pitcher-plant, *Cephalotus follicularis*. I say advisedly every one, for it is every one's plant. I have had a neat little specimen of it growing in my dining room for some months, and although it does not grow so fast as in a stove, yet it thrives well and looks healthy. I have it potted in sphagnum and peat, and covered with a bell-glass to exclude dust; this is tilted a little at the bottom. The plant is kept well watered, and is always an object of attraction to visitors.

Eucharis amazonica I found here treated very differently from what I had seen it anywhere else. It was grown in a cool house and allowed to dry off in winter. The plants were small, but were evidently thriving. That fine Fern *Lomaria gibba* is evidently in great request; and well it deserves to be, for this is another plant that stands well a sitting-room window, as I have a plant which has grown admirably under my wife's care, and has now attained a good size; so that here are two valuable plants for those who wish to try their hand at window gardening.

Where there is such an extensive seed business as that of the Messrs. Carter, great care is needed in the selection of seeds, that they may be good in quality and true to name. Hence the necessity of their trial ground; for they are not only obliged to have their own seed farms, but many persons throughout the country grow various seeds for them, and these must all be tested before they can be sent out. In one border I saw two thousand different kinds of flower seeds in small patches. These are subjected to two trials—first to see if the seed will germinate, and then if it be true to character. If the seeds fail in either of these respects they are at once discarded, and a supply from some other source has to be obtained. On another long border were samples of the various vegetable seeds undergoing the same sifting process. Here were rows of different kinds of Beet, there of Turnips, there again Savoy and the different varieties of the Brassica tribe. The samples are impartially drawn, and hence it is not much within the verge of probability that seeds not true to name will be sent out.

Just previous to my visit Mr. Boston had been through parts of France and Belgium searching for novelties, and had formed the same conclusion that I came to—that never were there fewer to be seen abroad than in 1867. He mentioned an *Iresine*, which I have since seen at Ghent, of a dark copper colour, that may be useful—more so than the golden-leaved variety of *I. Herbstii*, which, however pretty for the dinner table, will

never, I fear, be of any service in the garden. I saw a row of it here alternately with the ordinary type, but it did not look very attractive.—D., Deal.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Dig, ridge, and turn up all vacant ground; give plenty of air to all advancing crops in frames; clean and stir the soil among all growing crops in the open ground, and remove all decaying leaves. Keep the walks and borders in good order, and the kitchen garden clean and neat. *Asparagus*, if you have plenty of plants and command of dung and leaves you can have *Asparagus* from Christmas-day till it is cut from the open ground. *Cauliflowers*, seeds for the earliest crop may be slightly forward, together with *Radishes*, *Lettuces*, and *Potatoes*, also *Peas* and *Beans* for transplanting. *Onions*, by sowing these now on a slight hotbed, or in boxes in any house at work, much time and seed may be saved, and a surer crop may be obtained next summer, to be transplanted when fit.

FRUIT GARDEN.

Prepare the ground for those fruit trees, the planting of which could not be effected in the autumn, by thoroughly draining the borders, and forming a substratum through which the roots will not easily penetrate. In the absence of paving stones, tiles, &c., a good substitute may be formed of coarse gravel and finely sifted quicklime, in the proportion of six parts of the former to one of the latter, mixed well together with sufficient water, and laid down to the depth of 5 or 6 inches. From 15 to 18 inches of good loamy soil will be sufficient for Peach and Apricot trees; much less will do if the borders are mulched and cropping dispensed with. No manure ought to be mixed with the soil. In pruning Gooseberry and Currant bushes, care must be taken to thin these well out in the centre, so as to admit plenty of sun and air. The same remark is also applicable to standard Apple trees; the middle of the tree must be kept quite open, taking care that all the branches lead outwards, and preserve a regular distance from each other. Pear trees should also be thinned well out, and the produce will be much better in quality.

FLOWER GARDEN.

A part of this garden should in all large establishments be devoted to the rearing of evergreen shrubs, such as Laurels, Rhododendrons, Kalmias, Yews, Aucubas, and Laurustinus, which may be propagated at home, or bought in from the nursery when a year or two old at a very trifling cost. They come in very useful when making improvements, and are sure to grow from being accustomed to the soil and climate of the place. There are not many places where a few hundreds of these might not be planted with great improvement to the grounds. Auriculas may now be top-dressed, removing carefully the surface soil, and substituting some two-year-old decayed hotbed manure and leaf soil. Avoid all hot stimulating composts, for although they may increase the size of the flowers for the present season, yet they are food so uncongenial to the plant, that the foundation of future disease will most assuredly be laid. Polyanthus grown in pots may be kept moderately moist, and a similar top-dressing to that recommended for the Auricula will be of much service to them. They are, however, grown on beds with a north-east aspect with great success. A cool bottom, either artificial or natural, is necessary for their perfect cultivation. Continue to give Carnations all the air possible. If the green fly begins to be troublesome, remove it with a camel-hair brush. As spring advances the wireworm becomes more active and is mischievous to Pinks. If there is reason to suspect that any lurk in the bed, cut a Potato into quarters, inserting a skewer in each; place them in various parts, just below the soil, and examine them daily. They form effectual traps. In selecting roots of Ranunculuses for blooming, choose those with a high crown in preference to those of large size.

GREENHOUSE AND CONSERVATORY.

This is a good time to remove any Camellias that have no flower buds, to the stove, vinery, or any place where a gentle heat is kept up, and as soon as they begin to grow give plenty of water every day till their growth is finished. They may be kept in the stove till their flower buds are formed. Then, if they are kept in a cold frame all the summer, shaded for a few hours in the middle of the day while the weather is hot, and brought into the greenhouse by the end of August, they

will come into flower about the beginning of November. Another lot now in flower may be commenced to be forced a month hence for a succession. A third lot might be so treated in April, and the remainder of the stock may be kept unforced. When forced flowers are introduced into the conservatory less air should be admitted than for the collection of conservatory plants. See particularly that Orange trees, Neriums, and other plants are clear of insects before they begin growing, as young wood and foliage are very difficult to clean without injury. Most conservatory plants, being in large pots and boxes, require less water than those in smaller pots in the greenhouse. Rhododendrons and Azaleas are amongst the finest and easiest plants to force for the conservatory.

STOVE.

This is also a good time to place in a forcing pit dormant bulbs and tubers, such as many varieties of *Tippeastrum*. If these have been put to rest in their pots, it is best not to disturb their roots at present. If they want larger pots shift them when they are in full growth next month. Some of the *Gloxinias* are apt to damp-off if water lodges in the crowns of their tubers. *Gesnera elongata* is an excellent winter flower, which may be had from October to April with a little management. When this has done flowering it should be kept rather dry until it is pruned, and this should be done in succession till the end of spring. Those pruned now should flower next October. Prune the young shoots close to the main branches, and keep them in the stove with but little water till all the eyes are beginning to grow; then shake the mould from their roots, repot them in a light rich compost, and force them gently for three months. After resting in the greenhouse during the summer they should be again potted in August, or in succession throughout the autumn, and returned into heat; they will then begin a fresh growth, and will continue to flower for a long time. *Leonotis leonurus* treated thus, only being turned out of doors in the summer, may be had in flower from August to the end of November. There are two species of a half-Orchid genus from Brazil, which thrive exceedingly well in the conservatory in July, August, and September if now set growing in a brisk bottom heat and very rich soil. These are *Dichorisandra thyrsiflora* and *gracilis*, both with beautiful spikes of light blue flowers. The old *Costus speciosus*, by the same treatment, will come in very useful late in the autumn. As these plants, like the *Gloxinia*, require to be dry in winter, and may be kept where nothing else would grow, they are useful where room is scarce, and that is the case almost everywhere. Seeds of stove plants, or from foreign parts, may now be sown in well-drained pots, in peat and sand. Look over all plants regularly, and let everything be clean about them.

FORCING PIT.

As soon as the blooms are ready to expand the plants should be removed from close heat to a more airy situation for a day or two before they are brought into the conservatory or sitting-room. Syringe this pit at least once a day. Keep the plants free from insects. There are many plants, probably, that will force well which have not yet been tried.

PITS AND FRAMES.

Protect securely through the night, but give all the air possible during the day. Calceolarias and Heliotropes may be potted-off preparatory to being hardened for the flower garden. The whole of the Verbenas, Petunias, Salvias, and all the soft-wooded plants for bedding-out in the flower garden are best from spring propagation. These in store pots may now be introduced into heat for that purpose.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

WHAT Saturdays! The 11th distinguished by a rain that froze as it neared the ground, followed, as we expected, by open weather; and now, on the 18th, a deluge of rain and a hurricane that has tried trees, glass, verandahs, spouting, slates, and chimney pots, and sent them careering in many cases as if they had been so much gossamer.

The weather during the week enabled us to bring up to some extent arrears of out-door work—trenching and pruning, and even planting and transplanting, though we had rather have finished that some months previously. We would have planted a lot of Cabbages out, but the ground was still rather wet, and as we have at least three successions of young spring ones, and

a good number of Coleworts, which we protected a little from the frost, we have no occasion to hurry in the matter. The frost has as yet done us no harm in the vegetable way. We wish we could say the same of vermin, as mice and even rabbits attacked our Endive and Lettuce under protection. We are almost resolved in future to lift and protect no more Endive in winter, under similar circumstances. A fine lot placed in an earth pit, with old sashes over it, and covered with litter during the severe frost, has had the hearts nipped out most unmercifully, whilst much that was left where it grew with just a slight protection, has not been touched at all by the marauders. We have long found that whatever is taken extra care of, is more valued by mice as well as birds. The very idea of protecting makes them anxious to see and taste what is thus cared for. As to sowing out of doors, our ground is as yet too wet.

Parsnips.—We have just taken these up, as we wanted to put the ground in order, and a fine crop they have turned out. It may be fancy, but we always think that Parsnips are the better, and keep the better, when not taken up too soon. On the whole, we think the roots are more saccharine when used after the New Year, if taken up in November; but then we do not think they are so juicy, or so rich in flavour. The Parsnip, however, is one of those rich vegetables that, like the Vegetable Marrow, we cannot partake of often, and therefore we would be glad to receive opinions whether there is any valid reason, except its hardness, for allowing it to stand in the ground long after Carrots and other roots must be housed.

We allude to this all the more, because very much may often depend on very little things. A very clever farmer, who is very fortunate with his Mangolds, and uses them largely for his stock, takes great care to have them home dry, and built in triangular heaps, and thatched, but so that they shall not heat much. Slight heating, however, he considers of importance. Before Christmas the heads were just shooting a little, and there were little roots, about one-eighth of an inch in length, coming in little bundles here and there on the Mangolds, and he assured us that after they came to be in this slightly moving state, the cattle partook of them more eagerly, and threw much better on them. The matter is suggestive.

Variegated Kale.—How is it that in many cases a prejudice still exists against this beautiful vegetable, as tender when cooked as it is beautiful? Many grow the white and the red variegated varieties, but chiefly that they may use it for garnishing and dressing. Cooks say it is neither "one thing nor the other," looks sickly when cooked, and comes anything but the right colour. Now, we dislike ourselves to see sickly yellow Greens on the table, when they should be green, and when in all softish water a pinch of carbonate of soda, that will do good rather than harm, will keep Greens quite as green as they need be. A pinch of the same will secure a fine red or crimson-coloured dish of these red variegated Borecoleas, quite as good to eat as the green ones after they are frosted and properly cooked; and but for prejudice, a red or a white dish of these Greens might pass muster where the blanched Sea-kale is such a general favourite.

Spinach Beet.—This reminds us of another vegetable, and a very profitable one, that great numbers of families never use—namely, the Silver Beet. The leaves make an excellent Spinach all the summer, and the broad white footstalks, when separated from the leaves, and cooked when rather young, make an excellent continuation of and substitute for Asparagus and Sea-kale.

We have kept on successions of Sea-kale, Rhubarb, Mushroom, &c., in the Mushroom house, and made a bed for sowing Cucumbers. We would have made beds under glass for Radishes, early Carrots, and Potatoes, but the weather prevented our collecting leaves, and without them we could not do much towards forwarding these crops. After February we have had them early by merely covering with a frame, and husbanding what sun heat there was. They are all the better, however, of a little heat below them. A little bottom heat is useful for almost everything that is wanted early. Were we near a coalpit, where small coal is to be had almost for the taking-away, we would have shallow well-exposed borders heated beneath for many early vegetables that we are obliged to raise now with cumbersome unsightly dung beds. The dung, however, makes up for much of the labour and unsightliness; what gardeners would do without it in close-cropped gardens is more than we can tell, for even artificial manures will not answer always, or for every purpose.

We have sown little as yet in heat, except Cucumbers and Celery. It is bad policy to sow many crops early, and not be

able to find room for the plants. If they are not well treated, or suffer from confinement, they would have done better if sown a month later, when more room and attention could have been given them. Celery comes on so slowly that to have it early it requires to be sown thus soon. When we have sown even in December we have not had a run head. In fact, the running depends more on checks given to the roots than on early sowing. What is sown early grows very slowly; for mere general crops we have seen sowings in the end of March come in as early as plants from seed sown in February.

FRUIT GARDEN.

Looked over Grapes now becoming thin. A few bunches still hang in the orchard house, and would have been better, but some robins during the severe frost found a hole big enough for their little bodies. We are loth to meddle with them, for they are generally so innocent of wrong-doing to us.

Raspberries.—Took up and replanted a piece of Raspberries that was a little the worse of wear. We had previously secured a bearing plantation, so as to have no break in the supply. We had the white-flowering, large white-rooted *Convallulus* amongst the old plantation, and it had become so plentiful among the roots, that it beat us in summer to arrest its growth; and when once it was allowed to twine among the Raspberry stems it was vain to hope to paralyse the roots, the smallest piece of which will grow, and if not taken out of the ground it can only be killed by incessantly cutting off every shoot that appears. This is one of the most beautiful of our climbers in a wild state, and one of the worst of weeds to eradicate. We made sure that not a bit was left about the Raspberry roots, and where these were tolerably large we planted them so as to take a crop in the usual way; and when the roots had to be divided we planted and cut down, so that if they bear at all it will be on the young shoots in the autumn, which they are likely to do. They were planted in ground well trenched and manured, and mulched along the rows. The rows are $4\frac{1}{2}$ feet apart, and stakes are driven in, and long shoots or reds are tied along for the canes to be fastened to. This plan is as good as any; but as Raspberry plantations, if annually manured, last a long time, the best plan is to have a stout post at each end, and small iron posts between, and connect them with strained wire to fasten the canes to. At that width little will grow between the rows of Raspberries. We often plant in spring a single row of Cabbages that come in early in summer as the spring ones begin to fail, and then they yield a fine lot of sprouts in winter. No plantation of Raspberries thus treated will yield in proportion to a single row with plenty of room on each side, and therefore single rows, like single rows of Peas, will ever be the most profitable; but when much is wanted single rows round or in different parts of a garden, would be difficult to protect from birds, and that may be done when the plantation is all in one place.

Strawberries.—We have as yet done little with these, except securing all in pots, and keeping a lot under glass, with just a little heat below them to bring them on gradually. Some of our friends are vexing themselves that the old leaves are becoming withered, spotted, and anything but pleasant to look at. They need not trouble themselves on that account, for as growth commences and the flower trusses begin to show, fresh vigorous leaves will be produced. During winter we like all the old leaves to remain, as they act at least in the way of protection; but when we wish to start the plants for forcing we twist off these old withered leaves, allowing only the smallest and freshest in the centre to remain. For the same reason we do not give the final dressing to rows and quarters out of doors until fresh growth is commencing, when the old withered leaves are dressed-off and the surface mulching levelled, broken, and made neat. Ground may now be put in readiness for fresh plantations, bearing in mind that as it most likely will be unbroken again for two or three years, it will be advisable to trench it well and enrich it with rotten dung; and then if there is a good bed of young plants pricked-out in rich soil last autumn, these, if lifted with balls and planted carefully, will often fruit better than if planted-out finally in the previous autumn. All young plants do better when placed thickly, as it were, in a nursery at first, as the one protects the other; and in such a nursery bed it is easier to attend to their wants than when scattered over a quarter or a border. Putting the ground in fine order for the well-established plants to grow in at once in the spring is a consideration; so that in stiff soils especially, the first pricking-out, say 5 or 6 inches apart, and then raising again with balls, will be anything but labour lost.

Orchard Houses.—Most of our Strawberry plants are in the

openest orchard house, and, thanks to the snow, we did not as yet require to cover them there with any litter, nor yet the fruiting trees in pots, as the frost did no more than crust the surface lightly. We took advantage of the unfavourable weather, first to smoke the house most at liberty with Laurel leaves, and then, before the Strawberries were put in, we syringed the whole inside with hot water, in which a little soap was dissolved, about 2 ozs. to four gallons, using the water as hot as we could well do—from 160° to 180°, throwing it over the glass, woodwork, walls, and trees. Of course it would become cooler in passing from the syringe. The other house we could not do so thoroughly, owing to its containing things in a growing state, and there we washed the trees with a brush and warm water, with mere soap in it. When dry we washed or painted again with a weak solution of Gishurst, about 2 ozs. to the gallon, thickened a little with clay, and a little lime to give it a light colour. We have frequently used limewash, rather mild, alone, and with the best effects. We use the lime, however, chiefly for the colour, in order to keep the buds as backward as possible. We have had buds injured by using Gishurst at the strength of from 4 to 6 ozs. per gallon, and therefore we like to be careful. If the trees are thoroughly clean nothing is wanted, besides the washing, except in the way of precaution. A little clay thick enough to adhere is just as good for daubing up any inconspicuous eggs that may escape the brush, as anything else; and as on the closest scrutiny we did not detect a trace of an insect, but for making sure we should not have painted at all. The light colour imparted is, however, of some importance, as the blossoms will open later; and from this time forward, until they do open, the great point in these cold orchard houses is to keep them back as much as possible by all the air that can be given, unless when stormy or frosty. If there are not other subjects in the house, a few degrees of frost before the buds swell much will do good rather than otherwise.

We finished top-dressing the *trees in pots*, taking off all the mulching and a considerable portion of the surface soil with the fingers and a pointed stick, replacing it with fibrous loam and about a fourth part of sweet decayed dung, firming it well with a stick and mallet, and filling to within half an inch of the rim, or rather less, giving a little water only to those pots that were dry. We should have liked to have finished all the top-dressing before Christmas; but we did it as the weather was suitable for in-door work.

A few plants that were in small pots we shifted into others a size larger, using similar soil, but with less dung in it, and ramming it hard round the ball. We advise, however, that all such shifting be done at the end of October or the beginning of November if the plants are to stand in the house after shifting. No plants in pots are to be thoroughly depended on for fruiting well unless the roots kiss the sides of the pots, and this should be thought about in all potting.

If this can be secured, the mere time of potting is of less consequence; but the plants must be established under ordinary circumstances. For instance, we once had a nice crop of Cherries from plants in pots that had been grown in the open ground in a nursery during the summer, but were pinched-in and treated on Mr. Rivers's system. They had been taken up with good roots near home, but with nothing worthy of the name of a ball, and came to us in a neat package, the roots done up well in moist litter and fern, as far as we recollect, about the middle of March. We potted them carefully in rather small pots, laying out the roots carefully, and firming the soil as we proceeded, doing the most of it with our own hands. We then made a bed of warm litter and leaves from 18 to 24 inches deep, and plunged the pots into it, covering them over several inches, and putting in trial sticks so that the heat should not exceed at the hottest from 80° to 85°, giving no protection to the top of the plants except a net to keep the birds from the buds. By the time the buds began to swell, the heat of the bed was little more than the earth in the open air, and by that time the pots were becoming filled with fine roots. The pots were partly raised out of the bed, then altogether, and then removed to and plunged half way down in the soil of the house, and the crop was everything that could be desired.

We may here mention, that our pots are thus all partly plunged, chiefly for saving water, that these are allowed to let the roots out a little in summer at the bottom of the pots, are raised to break these roots in October or November, and that though we would wish to reshift, that most of our trees have been a number of years in the same pots, and have borne

heavy crops by the help of top-dressing and mulching in summer. If pruning and pinching were attended to in summer, little will now be required, and beginners should wait a month longer that they may see the wood buds better.

The above example will show what may be done, even now; but in the generality of cases, and where no such extra care can be given, we would advise those wishing for fruit in small pots, to let the plants remain in these pots for the season; but if very small make the hole large at the bottom, and either set the pot in the border of the house, or into a larger pot or box, so that the roots may pass through, and still those in the pots press against the pot. Much also may be done with repeated mulchings above the level of the pot; but of this and other matters in other departments, we must treat on another occasion.

Sulphurous Acid.—Wonders will never cease. We had hardly written the remarks lately on the deleterious effects of burning sulphur on all kinds of growing plants, than in the "People's Journal," of Dundee, we saw a notice of two pamphlets, issued by Dr. James Dewar, of Kirkcaldy, and Dr. Pearman, of Biggar, the one in the fifth, and the other in the seventh edition, both having had a large circulation, on the prevention and the cure of diseases by sulphurous acid, either in the way of fumigation or inhalation. While it is stated to be generally efficacious, it is particularly suitable in colds, catarrhs, diphtheria, fever, &c., and it is hoped it will be of much benefit in consumption.

According to Dr. Dewar the system can be conveniently practised as follows:—"Take a few red cinders on a kitchen shovel, and set this on a stool in the middle of the room. Then sprinkle flowers of sulphur in successive small quantities upon the cinders until the atmosphere is filled with fumes, but not disagreeably so. If fumes are rather strong the window or door may be opened. The process may be repeated; but a slight constant taint is recommended in the sickroom."

We presume that even such an amount of sulphurous acid as would be thus felt would make short work of any window plants. In this respect we believe that animal life is much harder than plant life. We have designedly killed every green leaf in a pit with burning sulphur, and then on clearing out we have found toads and mice alive. When we produce sulphurous fumes in our plant and forcing houses, we are obliged to use a low temperature, not liking even water to be above 170°, but rather lower than that, so that we can have the acid without the sulphur burning; and even for sickrooms it might be advisable to produce the fumes from the outside of a hot-water vessel instead of burning cinders, and then the same therapeutic effects might be secured with less annoyance.

Be this as it may, in the chief district of the straw plait trade, and where much cleaning and bleaching of the straw was done by burning sulphur in close rooms, whilst the little gardens shewed the prejudicial effects of the sulphur fumes, they seemed to exercise little prejudicial influence on the work-people. Indeed, when Luton, the great mart of this trade, had not as yet come under the management of a Board of Health, the comparative general health of the inhabitants, though the town was not very favourably situated otherwise as to sanitary matters, was often attributed to the sulphur used in the manufacture. In these days many are partial to tracing the accordances as well as the contrasts between vegetable and animal life; and we would merely wish to lay it down as a proved fact, that if men and women can stand a small dose of burning sulphur, and even be benefited by it, no growing plant can be exposed to such fumes without being injured, and often irreparably. We shall never forget the look of dismay presented by an old friend of ours, who, after benefiting by sulphur in rheumatism and lumbago, put a little of it among tobacco for smoking, to kill the insects on a petful of *Cinerarias*. If he did not kill all the fly, he did kill all the large leaves of the *Cinerarias*, rendering them useless.—R. F.

TRADE CATALOGUES RECEIVED.

William Paul, Waltham Cross, London, N.—*Select List of Vegetables, Flower, and Farm Seeds, Gladioli, &c.*

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Seeds for the Kitchen, the Flower Garden, and the Farm.*

W. Cutbush & Son, Ilighgate, London, N.—*Catalogue of Select Vegetable, Flower, and Farm Seeds.*

John Scott, Yeovil, Somerset.—*Catalogue of Vegetable, Flower, and Agricultural Seeds.*

COVENT GARDEN MARKET.—JANUARY 22.

We can barely keep up last week's prices as regards the best articles, owing to a considerable quantity of late Grapes being thrown on the market, chiefly Lady Downe's and Gros Guillaume. Pines are quite sufficient for the demand. Foreign importations continue heavy. Cornish Broccoli is now very good.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples ½ sieve	2	6 to 4	Melons..... each	2	0 to 3 0
Apricots doz.	0	0 0	Nectarines doz.	0	0 0
Cherries lb.	0	0 0	Oranges 100	3	0 7 0
Chestnuts bush.	8	0 11 0	Peaches doz.	0	0 0
Currants ½ sieve	0	0 0	Pears (dessert) doz.	2	0 4 0
Black do.	0	0 0	Pine Apples lb.	4	0 6 0
Figs doz.	0	0 0	Plums ½ sieve	0	0 0
Filberts lb.	1	0 0	Quinces doz.	0	0 0
Cobs lb.	1	0 0	Raspberries lb.	0	0 0
Gooseberries quart	0	0 0	Strawberries lb.	0	0 0
Grapes, Hothouse, 1 lb.	6	0 8 0	Walnuts bush.	10	0 14 0
Lemons 100	8	0 12 0	do. per 100	1	0 2 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes doz.	0	0 to 0 0	Leeks bunch	0	3 to 0 0
Asparagus 100	7	0 20 0	Lettuce per score	1	0 1 6
Beans, Kidney 100	0	0 3 0	Mushrooms pottle	2	0 3 0
Beet, Red doz.	2	0 3 0	Musl. & Cress, potted	0	2 0 0
Broccoli bundle	0	6 1 6	Onions per bushel	3	0 5 0
Bru. Sprouts ½ sieve	2	0 2 6	Parsley per sieve	4	0 5 6
Cabbage doz.	1	1 2 0	Parsnips doz.	0	9 1 0
Capsicums 100	0	0 0	Potatoes bushel	4	6 5 6
Carrots bunch	0	6 0 8	Kidney do.	4	0 6 6
Cardiflower doz.	3	0 6 0	Radishes doz. bunches	1	0 1 0
Celery bundle	1	6 2 0	Rhubarb bundle	0	9 1 0
Cucumbers each	1	0 2 0	Savoy doz.	1	0 2 0
Endive doz.	1	0 0 0	Sea-kale basket	2	0 3 0
Fennel bunch	0	3 0 0	Shallots lb.	0	8 0 0
Garlic lb.	0	8 0 0	Spinach bushel	2	0 4 0
Herbs bunch	0	3 0 0	Tomatoes per doz.	0	0 0 0
Horseradish bundle	2	6 4 0	Turnips bunch	0	4 0 6

TO CORRESPONDENTS.

“We request that no one will write privately to the departmental writers of the ‘Journal of Horticulture, Cottage Gardener, and Country Gentleman.’ By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.”

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (E. E. W.).—“The Garden Manual” contains what you need probably about Roses. If you enclose twenty postage stamps with your address, you will have it sent to you free by post.

SUGGESTION (Ambrose).—We are obliged by your suggestions, and gratified by your kindly wishes. You will see, as the year progresses, that we have arranged for some of the additions you suggest, but to adopt them all would oblige us to enlarge the Journal and increase the price.

HEATING (Broughston).—You have arranged the piping, &c., quite correctly, and according to the usual mode.

CHINESE SUGAR GRASS (W. Chisholm).—Your experience of this agrees with that of all others. “It is neither useful nor ornamental” in this country, and may be numbered with Mr. Huilett’s other “Mangosteen affair.”

GROUND VERNICES (F. J. C.).—Yes, that which you refer to and all others are to be closed at the ends.

DYING & BOTANICAL SPECIMENS (M. A. H.).—To take specimens home in good condition you must have a botanist’s tin collecting box, or vasesum. You cannot preserve the specimens so as to retain their colours. Spread the specimens so that the leaves do not touch each other between two sheets of your paper; and press gently with a handpress or hot flat-iron. Afterwards place the paper under a gentle pressure until the specimens are quite dry.

STRAWBERRIES AND POTATOES (L. A. W.).—The following twelve Strawberries will suit you.—Knight’s Princess of Wales, Eclipse, Oscar, Premier, Rivers’s Eliza, Viscountess Henriette de Thury, Sir Charles Napier, La Constante, British Queen, Carolina Superba, Dr. Hogg, Frogmore Late Pine. The three early Potatoes you should grow are Coldstream Early, Royal Ashleaf and Walnut-leaved Kidney.

DISSOLVING BONES BY POTASH (A. Schreiber).—No one can tell the exact quantity of caustic potash needed, for bones vary in the quantity of phosphate of lime which they contain. Let every bone be coated with potash; and if they are not entirely dissolved add more potash until they are dissolved. The manure will benefit rather than injure fruit trees. (W. B. C.).—In our Journal published on the 2nd inst., and the preceding note, directions are given for dissolving bones by the agency of caustic potash.

VINES (W. C. D.).—We quite agree with your gardener about the Vines which you have for early forcing, with the exception of Black Prince, which we, in opposition to the opinion of some, regard as an excellent Grape. Lady Downe’s is not adapted for early forcing, and what you say of the other two is very just. It is a very dangerous matter to advise the grafting of Vines, as the influences that various stocks exert on the scions are so different, and in some cases so very detrimental. Muscat Hamburgh is an excellent Grape and might do; you should get the Royal Ascut which we have just seen quite ripe, and most deliciously flavoured, on Vines which were planted out from 4-inch pots in May last. This will prove the most valuable of all Grapes for early work.

NEWLY-ENCLOSED GROUND (H. W.).—If you enclose five postage stamps with your direction, and order “Allotment Farming,” you will have a book sent you free by post, which details the information you wish for.

THEORY OF DRAINING (R. A. of R.).—How it benefits soils is fully explained in Johnson’s “Science and Practice of Gardening.” That earthenware pipes do admit the surplus water through their sides is proved by the quantity poured out from the pipes; and as they exhaust the surplus water in their neighbourhood other and more distant surplus water subsides thither, just as an open ditch or drain carries off water, and the excess of water in the soil near continues to ooze into the ditch or drain.

IVY (R. Pullen).—What you require we think is in our No. 201, published on January 31, 1885.

DESTROYING CRICKETS IN A CUCUMBER PIT (J. E.).—Try placing phosphorus paste spread on slices of bread in the pit, as recommended on page 467 of our last volume, or 1 oz. of arsenic and a little ground aniseed and caraway seed mixed with half a pint of oatmeal, of which they are very fond. Mix and lay on pieces of paper, but take care that no domestic animals partake of the poisoned mixture. It is a good plan to tempt the crickets with the oatmeal and aromatics, without the arsenic, for a night or two before using the poisoned mixture.

ORCHIDS FROM SEED (L. H.).—Many species and many hybrids have been raised from seed in this country. Mr. Downy, at Messrs. Veitch’s Nursery, has been especially successful in raising hybrids. Mr. Williams, in his “Orchid-Grower’s Manual,” says:—“Many kinds seed freely if the flowers are set, producing many seeds in a pod. When ripe the seed should be sown; but it requires great care, as it is not so easy to raise as that of many other kinds of plants; some of the kinds are a long time in germinating; I have known Orchid seeds lie twelve months before they made their appearance. To watch their progress when up is, however, highly interesting—first, the formation of pseudo-bulbs, then their advancement towards flowering, are processes full of pleasure yielding anxiety. The best place to sow is on the top of an Orchid pot, where the seeds will not get disturbed; let the peat be in a rough state; do not cover the seed, but give a little water with a fine-roseted pot, just to settle it in the peat; some rough blocks of wood on which another plant is growing afford a capital situation to sow upon; they should always be kept a little moist; and of such as are sown on pots in the same way, when the plants are strong enough, pot them off into separate pots, or place them on blocks in the material recommended for the parent. In potting and taking them up care must be taken not to break the roots.”

CHAUMONTEL PEARS IN JERSEY (O. P.).—We quite agree with you in thinking that the pyramidal form is much more graceful than the bush form, but the latter is as certainly less liable to have the fruit shaken off by high winds. Bush-formed trees shelter one another, but pyramids do not. The most prevalent and most powerful winds in Jersey we presume are from the S.W., and as your walls are 15 feet high, you may have some pyramids on that side near the wall.

TURFY PEAT FOR VINE BORDERS (An Inquirer).—If the soil of the Vine borders is very stiff, such as a clayey loam that adheres in large clods, then turfy peat or rather turfy heath soil will be beneficial. Such peat formed under water as that cut for fuel, will be of no advantage, but quite the reverse.

STEALING TURNIPS (S. de B. J.).—It is equally a theft whether you eat the Turnip in the field where it is grown, or take it away unladen. A bush was formerly hung up where wine, &c., were sold; and the proverb, “Good wine needs no bush,” implies that where goods are excellent they attract attention without any public announcement.

ROSE (Cyril).—“Mossy de Meaux” is the same as De Meaux or Pompon. Mr. W. Paul or any other florist can supply it. It is only fit for edgings.

ROSES IN POTS (Columbia).—“The Roses in 3-inch pots must necessarily be weak. It is best not to bloom them in their weak state. They should be shifted into 6 or 8-inch pots, and the growth of wood should be encouraged. As they are to be placed under shelter in winter, ripeness of wood does not signify so much as if they were to be wintered out of doors. The sooner they are put in larger pots the better. They may be sunk in the ground in the pots. Put some rotten dung under the pots for the roots to enter on passing through the holes in the bottom. When the plants are taken up to be housed in winter, their roots may be cut off level with the bottom of the pots. Roses planted out do better in summer than Roses in pots. Usually there is no difference in the treatment of Roses on Manetti stocks and Roses on their own roots. Roses on their own roots have this advantage, they may be cut down close if their wood is not good. The Tea Roses you named are good. Add these—Bouton d’Or, a beautiful little golden yellow Rose; Souvenir d’Elise, Adam, Rubens, Sombreuil, Elise Sauvage, Vicomtesse de Cazes, Souvenir d’un Ami, Homer, Madame Joseph Halphen, President, Triomphe de Rennes, Céline Forestier. Tea and Tea-scented Roses are the best for house culture. As they are deficient in deep colours, add some of the Roses named on page 55. Bourbons and China Roses are scentless, and should not be retained except for distinctness. If Roses are to be kept in pots continually they must be annually potted in fresh mould.—W. F. RADCLIFFE.”

ROSE TRIOMPHE DE RENNES, &c. (L. C.).—“I have a great many plants of Triomphe de Rennes. I have never known the blooms crack or be defective. A north-east wall is not a good place for a Tea-scented Noisette. Put it against your south-east wall. Perhaps a little root-pruning may stop its cracking. I have a small plant of Climbing Devonensis which I have not yet bloomed. Mr. Curtis gave me two fine Briar plants of it when I was at Rushton, and both died. I do not believe it to be a humbug. I should not cut it much, but prune it as if it were a Hybrid China pole Rose. It must have room to grow. It will most likely bloom well this summer, if not much cut with the knife,

Put your Marechal Niel against your south-east wall, spread it out, and nail it against the wall as if it were a fruit tree. Do not put any manure to your Climbing Devonensis till it has formed its buds, and then manure according to products. To overdo is needless to undo. It rarely occurs in the matter of manuring.—W. F. RANGLYRE."

PLANTING IVY (*Idem*).—If rooted in pots the plants may be turned out and placed where they are to remain now.

GAS HEATING (*W. Farley*).—You may heat your viney with gas, if you have a sufficient quantity consumed, and the fumes carried out of the house, as we have often pointed out.

HEATING BY GAS (*O. H.*).—The whole subject of heating stoves by gas for plant houses has lately been treated on, and plans, &c., given. We think it likely that the reasons why the gas in your case comes back into the house and will not go out at the pipe in your friend's house are these:—First, most likely the burners are too near the floor, the place where the burners are, not sufficiently shut in, and the flue pipe communicating with the burners from the outer air may be too much at times. If the burners are raised a foot above the floor, and the chamber, when the burners are lighted, is kept close, a small hole near the floor will be sufficient for combustion. Secondly, the burned gas will go away most effectually when the burners act on a concave bottom like a reversed funnel, and the discharge pipe goes from its centre, and after passing through the stove boiler goes at once perpendicularly out of the house. Let your friend first try the perpendicular pipe as an outlet, and do away with the horizontal one. We are glad your stove acts.

HOUSE FOR CUCUMBERS AND MELONS (*J. D.*).—Your plan will not succeed, proposing as you do to grow Melons and Cucumbers over your bed in front, with hot-water pipes beneath it, and also have a Peach and Apricot tree trained against the back wall, and Peach and Plum trees in the end-stem or cord-on style up the rafters. Apricots will scarcely stand any artificial heat until after the fruit is set and swelling, and, therefore, to have Cucumbers and Melons moderately early, you must give up all thoughts of Apricots. Peaches and Plums would only succeed if you were satisfied with late Cucumbers—that is to say, the temperature of your house must not be above 50° with artificial heat until all the fruit is set, and the second swelling must commence before the heat is much above 55° at night; but then that would not do for Melons and Cucumbers, which would need some 10° more heat. This moderately early crop of stone fruit, and late crops of Melons may be the object: at any rate, with two 3-inch pipes in the chamber beneath the bed, and outlets from it into the atmosphere of the house, there will scarcely be half heat enough for early Cucumbers and Melons. With that house merely 8 feet wide, if Melons and Cucumbers are to be trained under the glass, there will be no light for anything after the plants are established. Such a house with present arrangements would do for medium early Cucumbers, Strawberries, Kidney Beans, &c., on the back wall, and then would come in for keeping bedding plants in winter; or it would do admirably for a stone-fruit house, especially for Peaches and Nectarines, planted out or in pots, but we have little faith in the Cucumbers and stone fruit together.

HEATING A SMALL HOUSE BY A PROPAGATING TANK (*A Novice*).—We surely must have made a mistake in our references, but as you spoke of heating your tank from a boiler, it is probable we meant to refer you to the answer to "W. A. O.," which follows the answer to yourself in page 32. We have read your letter over twice, and we feel at a loss, keeping economy in view, and your own plans, how to advise you better than we have already done. For a house 12 feet by 8, with a walk in the centre, and a platform on each side, half of the back platform to be appropriated to a propagating tank, and as you tell us, you have as yet resorted to no mode of heating, our great difficulty is, how to reconcile your own proverb, "Poor people must be poor welders," with your proposal to erect a boiler and a chimney at the west end of this house, for heating this 6-foot tank, and by means of that heating the house when it was required, and when not used for propagating purposes. As to this heating the tank there can be no question; the question is, the great labour for such a small return. We recommended a tank much shallower, because in a deep tank the bottom water is never so hot as that at the top. Your proposed arrangement as to making the tank of wood lined with lead, and covering it with slate, is all right enough, so far as giving heat to your cuttings is concerned. These cuttings we presume you will enclose with a wooden case at the sides, that again covered with glass, and we would recommend you not to have these glasses hinged on, but in 18 or 24-inch lengths, so that you can lift them off and reverse them when you think proper, presenting the dry side to the cuttings when there is too much damp on the under side. At times the glass might even require a cotton cloth over it, especially at night. So far, provided the tank is heated for your cuttings, there can be no question of that answering, but formed of wood as you propose, and covered-in with glass—say from February to the middle of April, you would not obtain heat from that tank to keep spring and late winter frosts out of your house. The matter would be different if your tank were of iron, or even of bricks and cement, but little heat would come through lead and wood, and not enough would pass through the glass unless the tank were over-hot. If you heat the tank in the way proposed, you would require two 3-inch pipes in the house besides, with valves so as to use them or not. If near a kitchen fire, the supplying the tank with hot water is a good plan, and then you might have a small flue below the pathway. We think we could do all you want by means of a brick or an iron stove in the house, the heat from the top to be made available for the propagating bed. To secure cleanliness, and as you do not care about a fireplace outside at the end of the house, we would dispense with the tank, pipes, and boiler, make a hole in the wall outside, make a small furnace there, take a flue from it 6 feet long, return it to a small chimney inside or outside the wall, covering the flue with strong tiles or stone, and leave the outside of the flues exposed, so as to give heat to the house. If there is a space between fill up with clinkers, and plaster smoothly over. Then lay a course of bricks all round the outside of your flue in Portland cement, cover the tops of the flue with a layer of the same cement, and thus you will have what will act as a shallow tank, and the bricks round the side will do for setting your little boxes on. Place brickbats, &c., in your tank, cover with rough clean gravel, then with finer, and then with some inches of clean sand; and provided you can pour water when needed into your tank, you will have a first-rate propagating frame, and at less expense than the boiler, &c., would cost you. If the place is warm and close, deep plunging is unnecessary. We should say from 3 to 4 inches of sand—nothing is more cleanly—a pipe

and a funnel to get water at times to the bottom of the bed above the flue is all that will be necessary. When you want more heat in the bed than would suit the house, leave air on night and day. When not wanted for propagating, then the frames of glass being moved, a very little fire would make all right. If you still, however, resolve on your boiler and wooden tank, let us advise you to have a small boiler and a small fireplace, and to take pipes through the house as well, and so that you can heat tank or house independently of each other, a very easy matter to do even economically, in a 50 or 60-foot house, but not in a 12-foot one.

NEPENTHES AND ELLAGIA CULTURE (*E. M. L.*).—Pitcher-plants, though delighting in moisture, require good drainage. The pot ought to be filled with broken pots to one-third its depth, placing the largest pieces at the bottom and the smallest at the top. A suitable compost is formed of chopped sphagnum and fibrous brown peat in equal parts, adding one-sixth of charcoal from the size of a hazel nut up to that of a walnut, and a like proportion of silver sand. The compost should be made firm, and raised in the centre of the pot in the form of a cone rising above the rim. Like Orchids, the Nepenthes require large pots for the size of the plants, and their fibres only should be covered with the compost. The plant may be thus potted in March, and should be carefully watered, the compost being sprinkled with water through a fine rose occasionally to keep it moist. The atmosphere should be kept moist and rather close, but a moderate amount of air should be given in favourable weather, without lowering the temperature or making the atmosphere dry. When the plant is growing freely the pot may be set in a wide shallow saucer, which may be kept full of water all summer. It is well to keep the atmosphere moist by sprinkling the paths, walls, and every available surface twice or thrice a-day with water, and by means of evaporation troughs. Moisture thus supplied is better than heavy syringings, at all times injurious, or even lightly syringing the foliage; but an occasional light syringing will do good, and may be given twice a-day in hot weather, more especially if means for creating a moist atmosphere are confined to the evaporation of water sprinkled on the floor and walls. When growing, a brisk heat of 60 to 65° by night in spring, and of 70° in summer, with an increase of 10° by day without sun, or when cloudy, and 15 to 20° on clear days, is necessary for a good growth. The winter temperature may be 60° to 70°, and at that season the plant should have a considerably drier atmosphere, but not so dry as to affect its foliage. Slight shade from bright sun is necessary.

SONERILA MARGARITACEA CULTURE (*Idem*).—The pot should be well drained, placing a large crock over the hole in the bottom, and then some rather large pieces of broken pot, and enough small pieces to fill the pot to one-third its depth, and over this drainage a little moss may be placed. A compost of two-thirds sandy fibrous peat, and one-third turfy loam, with a little leaf mould, and enough silver sand to make the compost light, will grow the plant well. The compost should be broken and made fine, and well mixed. Pot in spring, removing as much of the old soil as practicable without disturbing the roots much; and in potting keep the centre slightly elevated, and make the soil firm but not very tight. Be careful not to overwater, merely keep the soil moist until the roots are working in the fresh soil, but when established give liberal supplies, taking care not to make the soil sour. The shoots when sufficiently long may be potted down, and they will root from the joints. Do not syringe overhead, but keep up a moist atmosphere by sprinkling the floors, walls, &c., with water twice daily. Afford a light situation near the glass, and one which is also moderately airy. In winter be careful not to overwater. An ordinary stove temperature is suitable, or from 60 to 75° in winter, and 65° to 85° in summer.

VINE LEAVES RUSTY (*A Young Gardener*).—Without seeing the leaves we cannot form an opinion as to what is the cause of the appearances.

FEEN CULTURE (*Idem*).—*Adiantum cardiolobum, concinnum, macrophyllum, and trapeziforme, and Pteris tricolor* succeed admirably in a stove temperature. We should conclude, from the young fronds perishing as they unfold, that the atmosphere is not warm enough, and that the plants are syringed overhead. We should advise you to pot all of them early in March. The plants being turned out of the pots, take away as much of the old soil as can be done without injuring the fibres, and place them in clean pots with a large crock over the hole or holes, 2 inches deep of rather large crocks over that, and then small pieces sufficient to fill the pot altogether one-third its depth of drainage. Over the drainage a thin layer of cocoa-nut fibre refuse or sphagnum may be placed. Use for potting a compost of two-thirds fibrous brown peat, and one-third turfy loam, pulled to pieces with the hand and made fine, to which add equal parts pieces of sandstone, from the size of a pea up to that of a hazel nut, and silver sand equal to one-fourth the peat and loam, mixing all well together. In potting make the soil rather firm, but not very tight, and do not bury the plants deeply: at the same time avoid potting high. Give a gentle watering, and do not syringe the plants over the foliage, but sprinkle the paths, walls, &c., with water twice or thrice a-day. Assign them a position near the glass, with room between the pots and the glass for the fronds to develop themselves. Be careful not to overwater until the roots are working in the fresh soil; but when the soil becomes dry, and before the foliage flags, give a good supply, sufficient to show itself at the drainage. When growing freely they will need to be well watered. Give a moderate amount of air, but avoid cold draughts and an excessive amount of air, so as to suddenly cool and dry the atmosphere. A temperature of from 60 to 65° at night, and of 70 to 75° on cloudy days, and 75 to 85° on clear days, with air, will grow them well. They must be shaded from the sun daily, from 8 A.M. to 5 P.M., from March to October. The atmosphere must be kept moist.

MOVING DAMSON TREES (*J. A.*).—If you can lift the trees with a good ball, we should recommend your moving them into the orchard; if you cannot make sure of a ball leave them where they are, give each tree a mulching of well-rotten manure, and avoid digging the ground in future, as it injures the roots. Digging the ground about fruit trees is bad.

PLANTING VINES (*Idem*).—In planting a new house we should certainly plant a Vine or two of Lady Downe's. It succeeds in the same house with the Black Hamburgh, but requires fire heat. The Lady Downe's is a good bearer; the berries not so large as those of the Black Hamburgh, and the bunches are not so heavy; but in weight per Vine it is nearly equal to the Hamburgh. The Vines you have will do for planting if well ripened in wood and healthy.

VINES WITH CUCUMBERS (*W. K.*).—You may grow Cucumbers and Vines together; but it is not desirable in your case, as the Vines will, if they

grow well, reach to the full extent of the rafters the first season, and to encumber the rafters with Cucumbers would tend to foster red spider and thrips. Unless you can keep the Cucumbers distinct from the Vines, do not attempt them; but it pays best to grow one thing well rather than two or more indifferently. Give the Vines every chance, and if you have Cucumbers let them be secondary to the Vines.

SIEVE OF APPLES (J. A.).—A sieve contains seven imperial gallons.

CINERARIA FLOWERS PETALLESS (J. W. B.).—We do not think all the buds on the specimens sent would not have had petals—indeed, some of them have, but many of them are blind. The specimens are fully a month from the blooming stage. We should attribute the flowers having no petals to defective impregnation of the flowers producing the seed, and we should think the fault lay with the pollen. The specimens show the plants to be very healthy and fine, and we think if you will have patience that you will yet have a fine bloom.

APPLE TREES COVERED WITH MOSS (B. Fran.).—The chief cause of the stems of fruit trees becoming covered with moss is the soil being wet and undrained. Moss will also luxuriate on trees in poor light soils if not liberally manured. To free the trees of the moss you should make them quite wet by syringing with water, and then, or after a heavy rain, when the branches are wet, sprinkle each tree with quicklime, covering it as equally in every part as possible. A rather thick coating should be given, and lime of the most caustic quality is best. We cannot account for your not being able to grow Parsley, having no data.

PROPAGATING CHRYSANTHEMUMS (B. Sandown).—The best way to propagate *Chrysanthemums* for out-door purposes, is to take off the well-rooted short-jointed stiff suckers and pot them singly in small pots. Place them in a cold frame, keeping them close for a time, or until they commence growing, when air should be given and the plants well hardened-off before planting out. The suckers may be taken off from now up to April. In frosty weather the frame should be covered with mats. Failing a frame, the suckers may be planted about 3 inches apart in light soil in a sheltered situation, planting them out with a ball in April, or when they become well rooted.

PEAR TREE SUCKERS (Idem).—The suckers that rise from old Pear-tree roots ought to be cut off quite close to the roots, the soil being removed for the purpose. If cut off at the surface they only increase in number; either dig or pull them up.

SAPONARIA CALABRICA SOWING (Idem).—You may, if your soil is light and the ground not very wet, sow the seed early in March; but you will gain nothing by sowing early if the ground is wet and cold. The plants will grow much better if the seed be not sown until the beginning of April.

PLUM GRAFTING (H. L., Oron).—Grafting is not a desirable mode of propagating the Plum, for, should the grafts take, gum or canker is apt to ensue. For success the scions should be taken off early, now being a good time, and it ought not to be deferred beyond the beginning of February. The stocks, too, should be headed down now near to the place where the scion is to be put on. If the stock is headed down, or the scion taken at the time of grafting, or both, success becomes very uncertain. The proper time to graft is when the sap is rising freely in the stocks, which is generally in March. Budding may be performed in July, when the bark parts freely from the wood. In grafting, if dry weather follow, success is rendered more certain by drawing the soil up in the form of a cone over the clay. You will not succeed with grafting the old Green Gage Plum tree. You might probably succeed if you were to insert some buds on the young wood.

MAGGOTS IN APPLE TREE (Idem).—We think the fleshy white grub is the larva of the Apple-borer (*Saperda bivittata*), a brown and white-striped beetle that deposits its eggs in the collar of the tree in June and July. The grub takes two or three years to go through all its transformations, penetrating the stem, and causing the death of the tree by consuming the alburnum. You operated just at the right time. Any remaining may be destroyed by thrusting a piece of wire into their holes. It is said that washing the stems with a solution of 1 lb. potash in four quarts of water will prevent attacks. We should cover the stem from which the bark is gone with clay, which, no doubt, would encourage the formation of fresh bark more speedily than were the stem left bare. Grafting clay will do.

LIQUID MANURE FOR FORCED RHUBARB (Idem).—In the forcing of Rhubarb on dung in a frame, watering with liquid manure, if not powerful, could not do any harm. We are not certain it would do good.

BEDDING PLANTS IN PIT (Man of Kent).—Your *Pelargoniums* that were cut back, and now have small leaves about the size of a shilling, will not give you any cuttings in spring. They will not do more than make good plants by bedding-out time, and if you take cuttings you will spoil the plants for making a good display in summer. You could not force the old plants without spoiling the cuttings, and we would, therefore, continue the plants in the pit, and let them become fine plants, which are far better for making a display than a lot of late-struck cuttings. You could make up a bed for cuttings, and some of the plants would certainly afford a supply; at least the cuttings in boxes will need heading-down, and they will afford excellent cuttings. One frame could be used for this purpose, and the other would serve admirably for your *Pelargonium* cuttings in boxes when you pot them. It is much too soon to pot them off; March would be a good time with you. The *Calceolarias* would do admirably in the cold frame, and are better without heat, but will need protection from frost. *Calceolaria* cuttings now put in will make fine plants by bedding-out time. They succeed without heat. The fibrous loam would answer admirably for potting off the *Pelargonium* cuttings, and for the potting of the old plants in April; but we would take equal parts of the fibrous loam, of the half-decayed turf chopped fine, and leaf mould, adding a liberal admixture of Reigate sand. The turf will be in fine condition by autumn. You will need all spare frame room for the *Verbena* cuttings, *Lobelias*, &c. The Mrs. Pollock *Pelargonium* not cut back will afford you cuttings, but we would not take them off until you can give them a gentle heat, and it will do when you make up your bed for cuttings in March. The cuttings would not succeed if put in pots and kept where the old plant is stationed. The old plant would do better in the pit, and the cuttings in a hotbed.

BEGONIAS (Judy).—We think Marshalli, Lowi, President Van den Hecke, and Pearcei are as handsome as any of the fine-foliaged *Begonias*. They will do fairly in a room, but to succeed will require to be kept in a glass case and in a warm room, or heated plant case.

COMPOST FOR THE TOMATO (J. H.).—The Tomato succeeds in a compost of two-thirds turfy loam and one-third leaf mould or well-rotten manure, well incorporated. To obtain strong plants for planting out in May it is necessary that the seed be placed in a hotbed, and the plants potted-off when large enough, and forwarded in heat, hardening them well off before planting out.

SOIL FOR MELONS (Idem).—The best soil for Melons is a strong unctuous loam, the top 3 or 4 inches of a pasture. Cut in autumn and placed in a heap, this will be in fine condition in spring.

SELECT RHODODENDRONS FOR BEDS (M. H. R.).—We would not have groups of one kind unless there were a number of beds, then a group of each of the following would be very effective:—*Blandyanum* superbum, light crimson, dwarf habit; Comet, scarlet; *Atror-sanguineum*, blood red; *Barclayanum*, reddish rose; John Waterer, crimson; *Maculatum* purpureum, purplish rose, spotted; Victoria, plum; William Downing, dark purple; Lady Lopes, waxy rose; Alarm, centre white, edged with light scarlet; Blanche Superbe, waxy white; and *Papilionacea*, pale lilac, changing to white. If you require more variety you may add Neilsoni, rosy lake; Madame Titeux, vivid rose; Toward, rosy lilac; Ninon de l'Enclos, rose; *Picturatum* superbum, white, dark spots; Princess of Wales, magenta edge, white centre; Leviathan, pinkish white; Jenny Lind, rose; Duke of Cambridge, crimson scarlet; Chloë, crimson lake; Lady Dorothy Nevill, purple spotted with black; Hogarth, rosy crimson; and Faust, lilac blotched. We should prefer plants one or two years from the graft set with bloom buds.

SELECT EVERGREEN SHRUBS (Idem).—*Cotoneaster* *Simmonsii*, *C. microphylla*; *Daphne* *oleoides* variegata; *Colletia* *bicentenaria*; *Viburnum* *tinus*; *V. tinus* *atrovirens*; *V. tinus* *strictum*; *Double-flowering* *Furze*; *Spartium* *junceum*; *S. multiflorum*; *S. scoparium*; *Raphiolepis* *ovata*; *Skimmia* *japonica*; and variegated and green-leaved *Hollies* in great variety. The following are good:—*Ilex* *latifolia*, *I. Tarago*, which have very large leaves and do not stand wind well, therefore require a sheltered situation; *I. altacalensis*, *I. balcanica*, glabra; *Hodginsii*, *maderensis*, *nigrescens*, and *Shepherdii*, which have fine broad leaves; *I. crassifolia*, *myrtifolia*, *ciliata*, and *angustifolia* have small leaves; *I. Deningtonensis*, which has long narrow leaves, and *I. Fisheri*; *Gold-edged*, *Gold Queen*, *Gold-blotched*, *Handsworth* *New Silver*, *Silver Queen*, *Silver-edged*, *Silver-blotched*, *Gold-blotched* *Screw-leaved*, and the *Gold* and *Silver-edged* *Hedgehog*. In addition to the above there are *Aucuba* *japonica*; *Arbutus* *undecolor*; *Berberis* *Darwinii*, *B. japonica*, *B. Bealii*, and *B. trifoliata*; *Buxus* *marginata*, *sulphurea*, *aurea*, *argentea*, and *Handsworthiana*; *Desfontainia* *spinosa*; *Escallonia* *macrantha*; *Enrya* *latifolia* variegata; *Ligustrum* *japonicum*; *Cerasus* *laurocerasus*, and *vars. colchicus* and *foliis* variegatis; *C. ilicifolius*, *C. lusitanicus* *myrtifolius*; *Chamaebatia* *foliosa*; the gold and silver variegated varieties of *Eunonymus* *japonicus*; and *Berberis* *agnifolium*. If you wish for *Conifers* you may plant *Abies* *canadensis*, *A. morinda*, *A. Menziesii*, and *A. Douglasii*; *Arcaeria* *imbricata*; *Cedrus* *deodara*; *C. Libani*; *Cryptomeria* *japonica*; *Cupressus* *Lawsoniana*, *C. macrocarpa*, *C. majestica*; *Chamaecypariss* *thurifera*; *Juniperus* *chinensis*, *J. Sabina*, *J. excelsa*, *J. suecica*, and *J. virginiana*, and *virginiana* *glauca*; *Picea* *nobilis*, *P. Nordmanniana*, and *P. pinsapo*; *Pinus* *austriaca*, *P. cembra*, *P. excelsa*; *Taxus* *adpressa*, *T. fastigiata*; *Thuja* *occidentalis*; *Thuja* *Loblii*, *T. occidentalis*, *T. Warreana*, *T. orientalis*, and *T. aurea*; *Wellingtonia* *gigantea*.

SELECT DECIDUOUS-FLOWERING SHRUBS (Idem).—*Double-flowering* *Peaches*; *Calycanthus* *floridus*; *Cerasus* *japonica* *multiplex*; *Chimonanthus* *fragens*, should have a wall with south aspect, as the flowers are produced in winter; *Crataegus* *oxyacantha*, *Double Red*, *Double Scarlet*, *Double Pink*, and *Double White*; *Cydonia* *japonica* *alba*, and *C. japonica* *rosea*; *Cytisus* *alpinus*; *Daphne* *mezereum*, and its white variety; *Deutzia* *gracilis*, *D. scabra*, *D. crenata* *flor-pleno*; *Forsythia* *viridissima*; *Genista* *tinctoria* *flor-pleno*; *Hibiscus* *syriacus*, *double* and *single* varieties; *Hydrangea* *japonica*; *Kerria* *japonica* *flor-pleno*; *Leycesteria* *formosa*; *Magnolia* *conspicua* *Soulangeana*; *Myrica* *gale*; *Paeonia* *Moutan* varieties; *Philadelphus* *coronarius*, and its *double* variety; *Prunus* *spinosa* *flor-pleno*, *P. triloba* *flor-pleno*; *Rhus* *cotinifera*, *R. elegans*; *Ribes* *aureum*, *R. sanguinacum* *album* and *atro-rubrum*; *Spiraea* *callosa*, *S. corymbosa*, *S. arifolia*, *S. prunifolia* *flor-pleno*, *S. salicifolia* *paniculata* *alba*, and *S. hypericifolia* *crenata*; *Syringa* *persica* *alba* and *laciniata*, *S. vulgaris* *alba*; also *Lilacs* *Charles X.*, *Dark Blue*, *Double Purple*, and *Dr. Lindley*; *Viburnum* *opulus*, *V. opulus* *nanum*; *Weigela* *rosea*, *W. amabilis* *alba*, and *W. Van Houttei*.

LILUM GIGANTEUM (C. W.).—You have done right to give but little or no water during the winter. In February we would advise you to shift it into a pot a size larger, in a compost of turfy loam two-thirds, and one-third very rotten manure or leaf mould. In potting you may remove all the loose soil, but do not disturb the roots more than can be helped. Good drainage is essential. When it is growing water it abundantly, and set the pot in a saucer of water. After growth keep dry and expose fully to light and air. Do not throw it away, but give every encouragement to growth; let that be well ripened, and your plant will assuredly bloom.

CYCLOPS AFRICANUS (Sandown).—You would have done well to have potted it so that the corm would have been covered with soil. It commences growth in autumn. Your bulb will probably remain dormant until next autumn. We would plunge the pot out of doors in an open situation, but shaded from the fierce rays of the sun at midday, plunging so that the rim of the pot will be level with the surface, and cover the pot and for some distance around it with leaf mould or cocoa-nut fibre refuse 2 or 3 inches thick, leaving it there until next autumn. If you grow it indoors you should keep the soil moist. No supplement to the "Cottage Gardener's Dictionary" has been published.

CLEMATIS FOR TRAINING ON TREES (M. H. R.).—The new Clematises are not suitable for such a purpose, but need open situations. *C. montana*, *C. montana* *grandiflora*, *C. florida* *plena*, *C. vitalba*, *C. viticella*, and *C. viticella* *flor-pleno* and major would probably succeed, and so will all if the situation be open, or but partially shaded. All are quite hardy.

NAMES OF FRUITS (A. Nottice).—1, Beurre Diel; 2, Passe Colmar; 3, March Bergamot.

NAMES OF PLANTS (J. W. W.).—*Calceolaria* *rimosa*. (N. W.).—1, *Asplenium* sp.; 2, *Sonerilia* sp.; 3, *Eranthemum* *leucocentrum*; 4, *Gymnosplenium* *Verschaellii*; 5, *Selaginella* (bad specimen); 6, *Selaginella* *Martensii*; 6, *Asplenium* *nidus* (?); 8, *Adiantum* *cuneatum*, var. 9, *A. garden* *Pelargonium*; 10, *Doodia* sp. Send better specimens. It is not possible to identify Ferns from barren fronds in a young state with precision.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending January 21st.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 15	30.130	29.788	54	29	44	40	W.	.00	Clear and fine; cloudy; clear and fine at night.
Thurs. 16	30.194	29.986	53	42	43	41	S.	.00	Densely overcast; overcast; densely overcast, boisterous.
Fri. . . 17	30.857	29.727	54	41	45	41	S.	.01	Densely overcast; slight rain; dark and boisterous. flow.
Sat. . . 18	29.622	28.950	50	40	46	42	S.	.56	Overcast, brisk wind; heavy rain, exceedingly boisterous; bar. very
Sun. . . 19	29.078	28.987	49	38	45	42	W.	.06	Fine, with brisk wind; cloudy; boisterous, with rain.
Mon. . . 20	29.478	28.901	43	24	45	43	N.W.	.00	Densely overcast; cloudy and fine; clear and frosty.
Tues. . 21	29.621	29.351	43	31	43	42	S.	.07	Overcast, overcast and cold; densely overcast; rain.
Mean	29.711	29.397	49.43	35.43	44.43	41.57	..	0.70	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GAME FOWLS.

CUP AND PRIZE SORTS AND COLOURS.—No. 1.

1. BROWN REDS.—These are essentially the Dark Reds, and are often so termed.

Cock.—General colour a rich dark brown red. Beak dark; upper mandible darkest. Comb, face, wattles, and deaf-ears all of a darkish gipsy-red colour. Eyes large, bold, full, and of a very dark blackish brown; the pupil not visible in the eye. Neck-hackle, or mane, rich dark brownish red, thickly striped with dark stripes under the outside feathers—"cut out" dark. Shoulders generally of a dark brown maroon red, but often of a rich orange red. Back a rich dark brown red, darker than the other parts of the plumage. Upper wing dark brownish purple red, or of a rich orange red in the lighter birds. Lower wing invariably of a dusky, smoky, very dark brown. Breast and thighs either red-brown, streaked with darker brown, or of a clear red-brown; any black streaks or markings objectionable. Tail dark greenish black, with dark fluff or down at the roots. Legs, feet, and talons, or nails, of a dark iron-brown or blackish bronze.

The wing often has a greenish bar, but the hardest birds are without this as a rule.

Hen.—General colour dark blackish brown, streaked, grained, and pencilled with a rather lighter brown on the dark ground. Comb, face, gills, and deaf-ears of a dark gipsy-purple colour, never red. Eyes large, bold, and full; as the cock's. Neck-hackle a golden-coppery dark red, thickly striped with very dark stripes. Breast and thighs dark; the former streaked with lighter brown on the dark brown ground. Legs, feet, and claws, talons, or nails, as in the cock.

Light nails or talons are very objectionable in this breed, as is a light beak or eye.

2. BLACK-BREADED REDS.—These should be essentially the bright reds, neither too light or pale, nor dark or dull.

Cock.—General colour a rich bright red. Comb, face, gills, and deaf-ears bright red. Eyes always red, either bright red or dark red. All other colours of eyes, as yellow, bay, or light brown, are inferior. Neck-hackle, or mane, rich bright red, lighter towards the shoulders, and striped underneath with dark blue stripes. Back, shoulders, and upper part of wings a bright full red, rather deeper in colour than the hackle or mane. The wings with a bright steel-blue bar across them. Lower part of wings a rich reddish bay or rich reddish chestnut colour, darker underneath. Wing-butts very dark brown. Tail dark greenish black, with not too much fluff at the roots, and that scanty and of a whitish or yellowish grey dun colour. Breast and thighs of a dark bluish black. Legs, feet, and claws willow or dark willow colour.

Willow legs are the favourites, but there are good birds with all colours of legs. Good red eyes and a bright red colour are the true requisites for Black-breasted Reds.

PARTRIDGE RED HEN.—General colour a rich reddish Partridge-coloured brown, often with yellow shafts to the feathers. Beak as legs in both cock and hen. Comb, face, gills and deaf-ears as the cock, but scarcely so red, though quite red. Neck-hackle a rich reddish golden colour striped with dark stripes. Breast and thighs a reddish fawn colour, or reddish bay colour, tinged with salmon colour. Tail dark blackish brown. Legs, feet, &c., willow preferred for cup birds. The nails should be dark with willow legs.

For courage willow-legged birds are not the best of this

colour as a rule; the blackish, carp-brown, and the white-legged birds, when red-eyed, being of the highest courage.—
NEWMARKET.

FURTHER REMARKS ON THE JUDGING OF BUFF COCHINS.

ENCOURAGED by the favourable criticism of "NEMO" and "Y. B. A. Z.," I venture to supplement my former letters, in which I pointed out some anomalies in judging Buff Cochins, by a few additional remarks. First, let me say "one word" in reply to "Y. B. A. Z."

A Cochin pullet or hen, minus the few principal feathers of her tail, can scarcely be said entirely to lack that member. A case in point came under my immediate notice very recently. A pen of Cochins, in this apparently tail-less condition, was passed over without mention at an exhibition of poultry. About a week afterwards they were sent to another, but in the meanwhile a very minute tip of black had projected beyond their tail fluff. It was just visible, and only just, but it made all the difference, and the birds referred to at once obtained precedence over some of their successful rivals of the previous week.

Another case has come to my knowledge, where a pair of Cochin hens were excluded from the prize list because one of them was tail-less, and, the Judges concluded, was therefore trimmed. In this case the bird had moulted her tail later than the rest of her plumage, and the principal feathers had not made their appearance; but, as in the case before referred to, they were all there, and if the Judges had only taken the trouble to handle the bird, they could easily have convinced themselves that not a single feather had been abstracted.

If, then, it be possible for a judge in the great majority of instances to satisfy himself beyond reasonable doubt as to whether trimming has or has not been practised, it is plainly his duty not to disqualify till he has ascertained by actual investigation whether the phenomena are due to nature or art.

It may of course be objected that a bird in such a condition is not fully developed, and therefore ought not to be exhibited. I have before replied to this, that, if so, secretaries should no longer announce that the ages of the birds exhibited will be taken into consideration by the judges; but I will venture further to illustrate the case in point by a parallel instance. What judge ever yet disqualified a Cochin pullet for not having "put up" her comb? And yet what judge could say, with certainty, of any pullet to which he had given a prize while in such an undeveloped stage, that she would not within a few days develop a comb too large, or twisted, or falling over?

If, then, a bird lacking the principal feathers of her tail ought to be disqualified, so, too, ought a bird whose comb has not undergone that process of development which usually precedes laying.

I have mentioned this question of comb incidentally, and as illustrating another subject; but I am anxious to call attention to it on other grounds. Would any brother fancier enlighten me as to the cause of twisted and crooked combs in my favourite breed, Buff Cochins?

I have been very careful to breed, on both sides, only from birds with irreproachable combs—low, firm, straight, and evenly serrated; and yet the majority of my pullets are developing their combs, some twisted, some falling over, many more like that of a Dorking than a Cochin. So long as their combs remain in the chicken stage they can hold their own in competition; but as soon as ever the usual development takes place their value as exhibition birds is at an end. If any brother

amateur who has experienced this same difficulty would give me his advice on the subject I should feel grateful. Can it be due to diet or climate, or any preventible cause, or is it usual for straight-combed birds to be in the minority?

Of one fact I am very certain—that it is a mistake to send valuable pullets to a show which is lighted with gas before the comb has assumed its adult development. There can be no doubt that the heat of the gas draws up the comb with unnatural rapidity; so that, too weak to bear its own weight, it becomes twisted or falls over. I have seen many instances of this, and have heard of still more. I did not see the last Birmingham Show; but in that of the previous year there were cases both of prize and commended pullets, with, to say the least, suspicious combs, where the birds referred to could scarcely have occupied the position they did had their combs presented the same appearance to the Judges which they presented to the public during the later days of the Show.

In one of my former letters I ventured to criticise a judgment of one of our deservedly most esteemed poultry judges. It has only just come to my knowledge that the statement which I made at the close of my letter is entirely erroneous. It therefore becomes my duty to make the only reparation in my power to Mr. Hewitt, by offering to him my most sincere and heartfelt apologies for having made an unfounded charge calculated to give him so much annoyance. I am taking an opportunity of privately explaining to him at large how I was myself misled; but though he has expressed no wish whatever to me on the subject, I feel that I cannot do less than endeavour to make my acknowledgement of my mistake as public as the mistake itself.—DELTA.

THE GAME COCK'S TAIL.

"NEWMARKET" does not seem to recognise more than two styles of tail, which he designates the drooping and the upright, and he advocates an upright tail well fanned. There is another style of tail which many other breeders and exhibitors of Game fowls besides myself prefer, and that is the "whip" or "switch" tail, composed of shorter, narrower, and harder feathers than any other, and in the general opinion it is far more elegant, and more in keeping with the fine head and neck of a Game cock. Birds with the switch tails do not, when in health and condition, droop them, but carry them well back at a slight elevation; and from personal knowledge I can affirm that I have found such birds the quickest, hardest, and most enduring of any.

I very much prefer the close, tight, and narrow tail of a moderate length in a Game hen, to the open or fanned tail, however good and sound its feathers may be.

Another point which has struck me is that "NEWMARKET" condemns as "cross-bred," and "not pure enough for cup and prizetakers," all the Brown Red Game cocks with any black stripes in the breast, and all hens with black bodies and striped hackles, although he acknowledges these to be the favourite colours.

While reading these remarks I thought, Are we not, then, to endeavour to improve any breed, to cultivate any better or handsomer style of marking and colour, and are we to confine ourselves to the oldest style we can find? How would the Spanish of twenty years back look in competition with the birds of the present day, whose faces have received the most careful attention at the hands of their breeders? or how would the originals of several other breeds of poultry stand comparison with their more cultivated descendants?

Another point, and the last I would call attention to to-day, is the designating of the Black-breasted Red breed "Partridge" hens. We might with as much propriety call Duckwing hens "Partridge"-feathered, as Black-breasted Reds. The Dark Cochins are also frequently called "Partridge," but often "Grouse," which I think is far nearer the mark.—EXETER.

[There are both.—EDS.]

FOUR-TOED HOUDANS.

HOUDANS increase in favour day by day—a good article always speaks for itself, and such they prove themselves everywhere to be. One correspondent says many of his hens laid from 200 to 250 eggs last year; another that a Houdan is as good eating as a hen Pheasant; while everybody admires the total disregard they have for dirt, damp, and cold.

I want to alter one point—that is, to do away with that wretched fifth toe. Of course, every one wants five-toed birds,

because "our judges" say it is right; but let the question be well ventilated, and let it be understood that a well-matched pen of four-toed birds is quite as perfect as one of five-toed birds. Put in the thin end of the wedge first; put four-toed birds on an equality with five-toed birds, and the latter will gradually vanish. No man, I suppose, in his senses, will say that five toes are preferable to four toes, as the making of a foot. I take it that does not admit of an argument. As for saying that Houdans are only pure when five-toed, it is sheer nonsense. Numberless birds come four-toed, and many with four toes on one foot, and five toes on the other; and, moreover, four-toed birds breed five-toed, and the reverse; so there really is no rule. It is, however, certainly most provoking to see a fine bird in all points put on one side because he has four toes, which ought instead to be to his benefit.

I want to see Houdans perfect, and I am certain that with four toes only they will be less liable to feet diseases than they are now.—F. H. SCHRÖDER.

LIGHT AND DARK BRAHMA POOTRAS.

As an old breeder and exhibitor of Light Brahmas, I hope I may be allowed a word on the above point. Mr. Worthington and Mr. Pares, both very enthusiastic admirers of the Light birds, seem to me to forget that the committees of shows are not blessed with unlimited means for the bestowal of cups. On the contrary, in a great many cases the attempt to lay the foundation of a permanent show, especially amongst us southern, results in loss to the originators. Take Bristol and Clifton, for instance, with its liberal schedule, its beautiful show room, the wealthy inhabitants, and teeming population, still the result is a loss more or less pronounced. Under such circumstances it does seem too hard to expect that in lieu of a cup to the best pen of Brahmas, one should be offered to Light, and another to Dark. At this rate, why should not the different varieties of Cochins ask each for a cup? More pointedly still, why not the various breeds of Hamburgh? The differences between them are surely as marked as those existing between Light and Dark Brahmas.

At the great majority of shows Brahmas have been divided into Light and Dark. What an advance this is on the time when, some three or four years ago, I urged in our columns the claims of Brahmas generally to a class. Is it to be, that having obtained this class at every show worth the title, having even obtained the division of this class at many exhibitions, Dark or Light breeders are still to be dissatisfied? Mr. Worthington, and Mr. Pares, and the Light breeders say, that it is all very well, but the Dark birds always take the cups. My reply is, Do they not always deserve them? I have but few opportunities of seeing shows; but wherever I do go, I am struck by the degeneration of the Light birds, while it must be allowed by all that the Dark have improved. This opinion must go for just what it is worth, but it is my honest opinion, written with no unkind feeling towards my old love. In the mere matter of leg-feathering, how infinitely inferior are the Light birds generally to the Dark. In the matter of legguiness, again, I think all will allow that generally the Dark class shows less of this failing. I recollect well a gentleman writing to me for Light birds some years ago, in which letter he said he had once asked Mr. Hewitt whether if two birds were equally good, he would give the prize to the Light. His reply was, Yes; but he had never seen the Light bird that was equally good. With this verdict from Mr. Hewitt, in the palmy days of the Light birds, when Mr. Pares's old cock was alive, what is to be expected now, when, as Mr. Pares says himself, he has never seen his equal since?

I cannot at all agree with the plan on which the decision of a cup should rest, according to Mr. Pares—viz., "The best relatively of its own variety." Does not this proposition carry on the face of it an admission that the Light birds are generally inferior to the Dark? What is the difference between the Light and Dark birds? Ought there to be any other difference than that of colour? Geese and Ducks are two distinct breeds; a cup given to these might be decided on the "relative" merits, one between two varieties of the same breed on the "comparative" merits.

So far as I can see, the Light birds are beaten by the Dark in size, substance, depth of breast, length of leg, and leg-feathering; at least, as the generality of each variety are exhibited at the present day. Will my Light Brahma friends feel hurt if I endeavour to reply to the question, Why is there this

inferiority? My old Light Brahmas, fourteen years ago, came from Garbanati's challenge birds. The pair of hens must have weighed 19 lbs. to 20 lbs., the smaller I showed at Newport weighing over 10 lbs., the other was a larger-framed bird; but on the score of colour they were vastly behind the present Light birds. Both cock and hens were darker, the white colour far less clear. At the present day, you may run over pen after pen of Light birds, and in colour they are perfect as to whiteness—often the hackle is too light. The rage has been to breed for colour, to discard birds however good, if the plumage is at all spotted with black. This has been carried out in some degree in the Dark variety, but there less damage has resulted; but to the Light birds, as I see them, it has proved ruinous, more or less, to all those points that should mark a good Dark or Light Brahma. It is possible that the two colours, and the other points, may hereafter be found united. Whenever that does takes place, I prophesy that the cup for the best pen of Brahmas will be found awarded to Light birds. Even now they are beautiful, then they would be amongst the very handsomest of our domestic poultry.—Y. B. A. Z.

I AM pleased to find the position of Light Brahmas in the prize lists being discussed in "our Journal," and have purposely waited the result of the Somerset County Show before offering my opinion upon the truths contained in Mr. Worthington's letter of the 19th of December, which is so much strengthened by the able communications from Mr. Pares and Mr. Crowley in the Journal of the 2nd inst.

It is, undoubtedly, true that the Light Brahmas have oftentimes been most grievously wronged at poultry shows, where cups have been awarded to Dark Brahmas of a most inferior description, when really first-class Light Brahmas have been shown against them.

In some instances that have come under my own notice, the judges have, on the other hand, been annoyed at not having the power to award the cups to perfect pens of Light Brahmas, instead of giving them to second-rate Dark Brahmas, because of the prize schedule announcing cups for Dark Brahmas only.

With regard to the general merits of both Dark and Light Brahmas, and their individual beauty, I think there can be no doubt but that the prevailing opinion will be found in favour of the Light Brahmas, as to the latter point; as to size, shape, laying qualities, and as fowls for table use, Light and Dark are equal at present, although I most firmly believe that as the Rouen Ducks have surpassed the Aylesbury in weight and general excellence, so will the Light Brahmas beat the Dark.

With regard to any difficulty judges may have in deciding as to which should win the cup of those two varieties, I will at present take the Somerset County Show as an example, upon which I have some of the best opinions, that the cup should have gone to the Light Brahmas, as the winning Dark were by no means superexcellent.

May we, the exhibitors of this most valuable and beautiful variety of fowl, hope you will use your powerful influence in our behalf? Place them upon an equal footing with their Dark relations, give them separate cups to win, and judge them impartially, and we have no fear as to which will come to the front.—F. CROOK.

As a friend of the Light Brahmas, I trust you will permit me to corroborate what has been lately written in your columns respecting the dissatisfaction which exists at the custom of combining Light and Dark in competition for the cup at poultry shows.

The custom is likely to be injurious in more ways than one. It must render the duties of the judges more difficult and onerous; for if it is notoriously often difficult to avoid giving dissatisfaction in judging birds of the same class, how much more difficult must be the judging of birds of different classes? Better, surely, to offer no cup than to offer it on conditions that foster discontent.

Then, as regards the exhibitors. They are forced to compete with birds of a different class from their own, which many will consider unsatisfactory, whether they win or lose; and they have the additional annoyance of knowing that, as the cup is nearly always adjudged to their rivals, their chance of success is almost hopeless.—R. HARVEY, Southampton.

It gives me much pleasure to observe that the friends of the Light Brahmas have at length determined to make a stand against the treatment their beautiful pets are and have been

receiving at the hands of the judges. It is quite preposterous that Dark Brahmas, merely because they are Dark, must beat all Light, no matter how great their merit. I find it useless to send Light to exhibit in a class for both varieties, as "Brahmas, any variety;" for Dark, even when relatively inferior, sweep off all the prizes. I trust that this state of things will not continue, but that there will be in every show a class for each variety; also, that when competing for a cup and medal, the Light will be put on an equal footing with the Dark.—ALEXANDER W. SHAW, *Lincolnton*.

TRIMMING SPANISH FOWLS' FACES.

I AM not a disappointed caviller, though, if honesty is the ruling principle, I am, I think, a hardly-used exhibitor. I know all the complaints made against judges, &c., to whom, I think, great praise is after all due; but I have never heeded them, taking them to be, as in part, perhaps, they are, simply the complaints of the discontented. Whether this my letter is the same I leave you to decide.

Now, I ask any disinterested person to take one class of fowls—viz., Spanish, and examine critically the faces of the birds at any show, and then to give me a candid answer whether in his opinion the faces of any, and generally the prizetakers, are trimmed or not? Again, I ask, supposing the answer in the affirmative, is this honest? If it is honest, let it be understood that it is so, that all may have the advantage (and a great one it is), of sending their birds trimmed; but if it is not honest, let it be held as such, and condemned accordingly. That it improves the bird's appearance no one, I think, can doubt; and I say nothing as to whether birds should be sent as they are, or as they ought to be; whether they should be the real or the ideal; but let all the honest and (I will not say dishonest) "those who see no harm in it," have the same advantages.

I do not think the exhibitors are alone to blame; I strongly blame also the judges. For if they do not, they ought to know, when to distinguish a natural from a non-natural face. I maintain that they, by not condemning this practice, virtually encourage, and, therefore, are themselves sharers in it.

Again, not only is it dishonest in these individuals, but also, I maintain, that the managers of the shows are to all intents and purposes obtaining money under false pretences. If I send my bird untrimmed, but in every respect good, I expect him to have as good a chance as one that is trimmed—nay, I should say, even a better; but it has not as things exist at present, and, therefore, I pay my money under a false impression. If, however, it is a recognised principle that all may do so, I have done; my point is gained. I do not myself see, in fact, why it should not be so.

Of course, some one will exclaim, "Oh! here is a maundering complaint of one who sends bad birds and expects prizes." Perhaps it is so; but that is not the question. I ask him to judge for himself. As it happens, I have a somewhat substantial proof that it is done, and that accordingly the judges wink at it, and so the more tender-conscienced suffer. Of course this is supposing the judges are competent persons (and their names ought to be sufficient guarantees for this); if they feel they are not, they have no business to judge. To one who knows anything about the matter at all, such things ought to be clear.

I shall suggest no remedy, it is simple enough, and shall say no more, but leave it in the hands of those more competent than myself to judge. One thing I ask. Let it be strongly decided either that all may trim or none, though this latter is nominally the rule even now; and let also the judges, who have it in their power, enforce honesty, remembering that if deceit is practised in one class it is probably done in another. It is as dishonest, under existing circumstances, to pick feathers from a Spanish fowl's face as from a Brahma's hock. Do not let poultry-fanciers be the contradicators of the apparently somewhat selfish motto, "Honesty is the best policy."—A. H. D.

POULTRY ACCOUNT FOR THE YEAR 1867.

BREED—Pure Dorkings, and cross-bred Brahma and Dorkings. No. of eggs, 1561. Chickens hatched, 157. Chickens reared, 124. Average No. of hens, 24. Out of 124 chickens reared, 52 were destroyed by rats and dogs, and during the cold and humid months of October, November, and December, my

fowls ceased to lay altogether; however, my balance sheet will stand thus:—

	£	s.	d.
139 dozen of eggs at 1s. per dozen	13	10	0
52 Cockerels and Pullets killed for the house, at 2s. each	5	4	0
6 Pullets sold at 3s. each	0	18	0
20 selected Pullets and Cockerels remaining in stock, at 6s. each	6	0	0
Cost of corn at one bushel per week	18	12	0
Profit	8	4	0

I have charged the house with eggs at 1s. per dozen, for which I could have readily obtained much more had they been sold; and many of the chickens killed would have realised 5s. or 6s. per pair.—Powis, *Liverpool*.

MY POULTRY YARD.—No. 3.

With my French fowls I was successful. I began by purchasing a sitting of eggs; but at first my hopes were doomed to be frustrated—not an egg hatched. I next procured another sitting from the same vendor, and hatched two birds; I then bought one more dozen, and hatched four: so altogether I had six Crève-Cœurs. The chickens all lived and did well. There were four hens and two cocks. I saved the most promising of the cocks, and then with a cock and four hens started again.

My hens were all black, and so was the cock till six months old, when gradually silvery white feathers appeared in the hackles, and they went on increasing till the cock had a silver collar. He was a very handsome bold-looking bird with a fine crest and comb, and the hens were good birds too. They commenced laying in December, and laid in the twelve months 643 eggs—namely, December, 15; January, 68; February, 87; March, 82; April, 49; May, 57; June, 88; July, 81; August, 62; September, 45; October, 7; November, 2.

I sat many of these eggs, and hatched good chickens, which did well for the table in spite of their blue legs. My hens never showed the least inclination to sit, but after stopping laying eleven or twelve days began again. They laid good-sized white eggs with yolks of a pale yellow colour. I did not think the eggs quite as richly flavoured as those of the Hamburgs and other breeds, but they laid well. They bore confinement well, though rather spiteful birds. They had the fault of their crests getting wet by the early dews, the feathers then massing together and falling down on either side, disclosing the flesh. When they did this I used to comb their crest feathers, and they would then recover their proper posture in a few hours.

I eventually gave up this breed, because the cock died and I could not obtain another easily; and then I took to Dark Brahmans—that most perfect kind of fowls—that breed which will supply you with eggs when other fowls are cut up by the cold. They are truly hardy, useful, clean fowls.—R. S. S. W.

KENDAL POULTRY SHOW.

THE thirteenth annual Exhibition was held in Albert Buildings, Kendal, on the 16th, 17th, and 18th inst. There were upwards of 700 entries. The following is the list of awards:—

GAME (Whites and Piles).—First, E. Pashley, Workshop. Second, R. Butcher, Chesterfield. Third, J. Brough, Carlisle. Highly Commended, J. Philipson, Lyth, Milnthorpe; A. Dawson, Kendal.

GAME (Black-breasted and other Reds).—First, Duke of Newcastle, Cumber. Second, W. J. Cope, Barnsley. Third, T. Robinson, Ulverston. Highly Commended, J. Fletcher, Stoneclough; C. W. Brierley, Middleton, Manchester; J. Wood, Wigan; A. Dawson. Commended, E. Akroyd, Bradford; J. H. Wilson, St. Eves. **Chickens.**—First and Cup, Duke of Newcastle. Second, T. Burgess, Burleydam, Whitechurch. Third, A. K. Briggs, Bradford. Highly Commended, J. Hodgson, Whittington, Burton; J. H. Wilson. Commended, T. Mason, Green Ayre, Lancaster; D. Tait, Hawkshead.

GAME (Any other variety).—First, W. J. Cope. Second, Duke of Newcastle. Third, J. Fletcher. Highly Commended, J. Wilson, Penrith. Commended, W. Pooley, Beathwaite Green, near Milnthorpe. **Hens.**—First, C. W. Brierley. Second, W. Hodgson, Darlington. Third, J. C. Bell, Kendal. Highly Commended, J. Larrow, Kendal; E. Aykroyd, Bradford; T. Robinson.

HAMBURGERS (Silver-spangled).—First and Third, H. Beldon, Goitstock. Second, J. Fielding, Newchurch, near Manchester. Highly Commended, J. Fielding; J. Smalley, Livesey; H. Pickles, jun., Early. Commended, J. Robinson, Garstang; J. Wild, Waterworks House, Ashton-under-Lyne; T. C. & E. Newbitt, Epworth.

HAMBURGERS (Golden-spangled).—First and Cup, H. Pickles. Second, H. Beldon. Third, J. Walker, Knarborough. Highly Commended, E. Brierley, Heywood; T. Burgess, H. Beldon. Commended, T. Stuart, Staveley, Kendal; A. A. Hyde, Hurst, Ashton-under-Lyne; J. Mann, Staveley, near Manchester; N. Maplow, Denton, near Manchester.

HAMBURGERS (Silver-pencilled).—First and Cup, H. Beldon. Second, J. Walker. Third, H. Beldon. Highly Commended, J. Preston, Allerton,

near Bradford; J. Smith, Earby. Commended, W. & J. Bairstow, Ferncliffe, Bingley.

HAMBURGERS (Golden-pencilled).—First and Second, H. Beldon. Third, W. Parr, Patricroft. Highly Commended, B. Bee, Bullsnap; J. Robinson; W. Bowe, Carlisle; T. D. Mort, Stafford; H. Pickles. Commended, J. R. Jessop, Hull; F. Pittis, jun., Newport, Isle of Wight.

DORKINGS (Coloured).—First, J. Robinson. Second, J. Clift, Dorking. Third, J. White, Warlaby. Highly Commended, J. Cople, Ecclestone, Prescott; D. Parsons, Cuddon. Commended, Duke of Newcastle. **Chickens.**—First and Cup, J. Cople. Second, W. Rutledge, Storthend. Third, Duke of Newcastle. Highly Commended, J. Robinson; J. Clift. Commended, D. Gellatly, Meikle; G. Roadley, Wetherall Abbey, Carlisle.

DORKINGS (Silver-Grey).—First, R. D. Holt, Orrest Head. Second and Third, R. Smalley, Lancaster. Commended, W. Rutledge. **COCHIN-CHINA (Cinnamon and Buff).**—First and Cup, C. W. Brierley. Second, Hon. Miss Douglas Pennant, Penrith Castle, Bangor. Third, T. Stretch, Ormskirk. Highly Commended, H. Beldon; J. Mapplebeck, Mosley; Messrs. Gunson & Jefferson, Whitehaven.

COCHIN-CHINA (Brown and Partridge-feathered).—First, T. Stretch. Second, E. A. Aglionby, Estwaite Lodge, Hawkhead. Third, C. W. Brierley.

COCHIN-CHINA (White).—First and Second, R. Smalley. Third, R. Chase, Balsall Heath, Birmingham. Commended, S. Sherwon, Whitehaven. **Chickens.**—First, Second, Third, and Highly Commended, R. Smalley. Commended, J. W. Carter, Preston.

SPANISH (Black).—First, H. Beldon. Second, Dorch & Bonlter, Sheffield. Third, J. Thresh, Bradford. Commended, A. Fulton, Sedgwick.

Chickens.—First and Cup, H. Beldon. Second, Messrs. Bowman and Fearon. Third, J. Newton, Silsden, Leeds. Highly Commended, Messrs. E. & H. Cumber, Warrington; R. Brown, Stockport; J. H. Wilson; Hon. Miss Douglas Pennant.

BRAHMA POOTRAS (Light).—First, H. Lacy, Lacy House, Hebden Bridge. Second and Third, J. Pares, Postford, Guildford.

BRAHMA POOTRAS (Dark).—First and Cup, W. Hargreaves, Bacup. Second, H. Lacy. Third, Hon. Miss Douglas Pennant. Highly Commended, Miss E. A. Aglionby; Rev. H. Monsarrat, Kendal.

FRENCH.—First, Col. Stuart Wortley, Grove End Road, London. Second, H. Beldon. Third, R. Brown, Cheadle, Hulme.

ANY OTHER DISTINCT VARIETY NOT PREVIOUSLY MENTIONED, EXCEPT RASTAMS.—First, H. Beldon. Second, W. Mason, Denton, Manchester.

Third, S. Taylor, Ibbotsliedme. Highly Commended, G. Hustler, Stillingfleet; W. Robinson, Garstang; D. Parsons; J. R. Jessop; F. Pittis, jun.

SELLING CLASS (Any variety).—First, H. Beldon. Second, N. Cook, Chawthorn. Third, J. Thompson, Bingley. Highly Commended, J. Walker, Kendal; T. Taylor. Commended, J. Walker; J. Wilson, Penrith.

GAME COCK.—First, C. W. Brierley. Second, J. Fletcher. Third, W. Boulton. Fourth, E. Akroyd, Bradford. Highly Commended, Capt. Wetherall, Loddington; W. Boyes, Beverley. Commended, J. Fletcher.

Cockerel.—First and Cup, B. Jarvis, Mansfield. Second, R. Pashley. Third, J. Fletcher. Fourth, W. J. Cope, Barnsley. Highly Commended, W. Boulton. Commended, R. B. Riley, (Oven), Halifax.

ANY OTHER VARIETY EXCEPT GAME AND RASTAMS.—(Cock).—First, Mrs. Moffat, Ecclefechan. Second, H. Beldon. Third, Hon. Miss Douglas Pennant. Highly Commended, A. Fulton, Sedgwick.

BANTAMS.—First, J. Wood, Chorley. Second, C. W. Brierley. Third, J. Buckley, Melton Mowbray. Highly Commended, Rev. A. K. Cornwall, Bencombe; Messrs. Furness & Bamber, Wood Nook, Accrington; Messrs. W. & H. Buckley, Accrington.

GAME (Black-breasted and other Reds).—First and Cup, J. Parlett, Huntington. Second, Mrs. Dale, Scarborough. Third, J. Buckley. Highly Commended, W. Boulton; F. Powell, Knarborough; Messrs. Bowman & Fearon.

GAME (Any other variety).—First, E. Jarvis. Second, R. Swift, Southwell. Third, J. Parlett. Highly Commended, J. R. Robinson; H. Shumack, Southwell; F. Pashley.

BANTAMS (Any other variety).—First, W. J. Cope, Barnsley. Second, Messrs. Tonkin & Tucker, Bristol. Third, C. W. Brierley. Highly Commended, A. K. Eriger, Bradford.

DUCKS (White Aylesbury).—First and Cup, Mrs. M. Seamus, Hartwell, Aylesbury. Second, E. Leech, Rochdale. Third, Mrs. M. Seamus. Highly Commended, Rev. G. Hustler; D. Hardie, Langholm.

DUCKS (Rouen).—First, W. Willison, Highgate. Second, Rev. G. Hustler. Third, D. Hardie. Highly Commended, E. Leech; T. Noble, Natland Park; J. Robinson. Commended, A. Stuart, Staveley, Kendal; J. White, Whitley Netherthorn, near Wakefield; T. Robinson.

DUCKS (Any other variety).—First, S. & R. Ashton, Mottram. Second, E. Longton, Woolton. Third, D. Parsons. Highly Commended, Messrs. J. B. & R. E. Cockerton, Cartmel Fell. Commended, Mrs. T. W. Simm, Watercrock, Kendal.

PIGEONS.

CARRIER.—First, J. Hawley, Bingley. Second, W. Jackson, Bolton-le-Sands. Commended, J. Cragg, Kendal.

TUMBLERS (Almond).—First, E. Brown, Sheffield. Second, F. Key, Beverly. Highly Commended, J. Fielding, jun., Rochdale. Commended, R. Whitaker, Bolton; J. Fielding, jun.; Messrs. T. C. & E. Newbitt, Epworth.

TUMBLERS (Any variety).—First, R. Whitaker. Second, J. Fielding, jun. Highly Commended, J. Fielding, jun.; T. Newell, Ashton-under-Lyne; J. Hawley. Commended, H. Yardley, Birmingham.

OWLS.—First and Second, J. Fielding. Highly Commended, T. Newell; J. Towerson, Egrement. Commended, Messrs. T. C. & E. Newbitt.

POUTERS AND CROPPERS.—First, T. Kew, Burton, Westmorland. Second, H. Yardley. Highly Commended, J. Hawley. Commended, J. Towerson.

BARBS.—First, T. Kew. Second, R. Thompson, Moresdale Hall. Highly Commended, H. Yardley.

BANTAMS.—First, J. Hawley. Second, Messrs. T. C. & E. Newbitt. Commended, Mrs. Arnold, Aldrigg End.

TERRITS.—First, J. Hawley. Second, T. Rutherford, Thirsk. Commended, J. Fielding.

TRUMPETERS.—First, J. Thompson, Bingley. Second, J. Hawley. Highly Commended, J. Hawley; J. J. Wilson, Darlington.

JACOBS.—First, Second, and Highly Commended, R. Thompson. Commended, T. Newell; J. Thompson; J. Towerson.

ANY OTHER VARIETY.—First, R. Thompson. Second, H. Yardley. Highly Commended, H. Yardley; J. Rutherford. Commended, J. Hawley.

SELLING CLASS.—First, Messrs. T. C. & E. Newbitt. Second, J. Thompson. Highly Commended, W. Jackson; F. Key.

LOCAL CLASSES.

GAME (Any variety).—*Chickens*.—First, M. Graham, Kendal. Second, J. Barrow, Kendal. Third, G. Robinson, Highgate, Kendal. Highly Commended, M. Graham.

GAME (Any variety).—*Hens*.—First, R. Woolf, Old Hutton. Second, J. Barrow. Third, R. Mattinson, Kendal. Highly Commended, J. Gelderd, Kendal; M. Graham.

HAMBURGERS (Any variety).—*Chickens*.—First, W. M. Mann, Kendal. Second, S. Noble. Third, T. J. Harrison, Singleton Park. Highly Commended, T. Smart; W. Mann. Commended, J. Hutchinson, Kendal.

SPANISH (Black).—*Chickens*.—First and Third, J. Goth, Woodside. Second, J. P. Harrison, Kendal. Highly Commended, J. Bateman, Kendal.

DONKINGS (Any variety).—*Chickens*.—First and Highly Commended, R. D. Holt. Second, W. Rattledge, Kendal. Third, P. Wilson, Kendal.

BANTAMS (Any variety).—*Chickens*.—First and Second, J. Gelderd. Third, W. Caton, Kirkby Lonsdale.

DUCKINGS (Any variety).—First, J. Goth. Second and Third, R. Willson. Highly Commended, A. Smart. Commended, R. W. Simpson, Kendal.

TURKEYS.—First and Third, T. J. Harrison. Second, C. W. Wilson, Oxenholm.

GEES.—First and Third, T. J. Harrison. Second, R. Rawlinson, Kendal. Highly Commended, C. W. Wilson; C. Elenkorn, Whitwell.

BARNDOR (Cross-bred).—First, T. Bradley. Second, J. Harrison, Burnside. Third, J. Cragg.

JUDGES.—Mr. T. Challoner, Chesterfield; Mr. Sargenson, Liverpool; and Mr. R. Tebbay, Fullwood, Preston.

NENTHEAD POULTRY AND CANARY SHOW.

The third annual Show took place in the village schoolroom at Nenthead, Cumberland, on the 17th inst.

The prizes were not such as to encourage competitors from a distance, but many of the pens shown were very creditable to the local exhibitors, especially the *Game*, which seem to be general favourites, some of the pens and many unmatched birds being of great merit. The pen of adult birds shown by Millican & Brown were fine birds in the hand, though the cock had suffered the loss of most of his tail. Messrs. Walton & Rutherford's pen of Black-breasted Red chickens could not be easily beaten at any show.

Golden-spangled *Hamburghs* were very poor, but the Silver-spangled were better. Many good pens of both Gold and Silver-pencilled were shown. In fact these birds far excelled the Spangled in point of merit.

Dorkings were few but good. In *Bantams*, Gamewon both in the adult and young class. The first-prize pen of chickens was of unusual merit. Some very good *Cochins* were also exhibited.

In the class for hens a fine pair of *Game* was first, and an excellent pair of Spanish second.

Ducks and *Pigeons* did not muster well, for unfortunately the deleterious quality of the water from the lead mines, and the quantity of poisonous matter on the roads, prevent their being kept in any numbers.

The show of cage birds was large and well worth seeing. Canaries, especially, receive much attention in the neighbourhood.

A most perfect pair of Himalayan Rabbits was first, and two Lop-eared of dissimilar colours were second. The clergyman of the village is President of the Society, takes great interest therein, and can bear testimony to its beneficial influences in a moral as well as pecuniary point of view.

The following is the prize list:—

GAME (Black-breasted and other Reds).—First, Millican & Brown, Nenthead. Second, W. Walton, Cocklake. Highly Commended, Walton and Rutherford, Greenheads. *Chickens*.—First, Walton & Rutherford. Second, J. Stephenson, Nenthead. Highly Commended, W. Laverick, Nenthead.

GAME (Any other variety).—First, Millican & Brown. Second, J. Gibson. *Chickens*.—First, W. Walton. Second, Millican & Brown.

HAMBURGH (Golden-spangled).—First, R. Pickering, Frosterly. Second, T. Horne. *Chickens*.—First, R. Pickering. Second, T. Horne.

HAMBURGH (Golden-pencilled).—First, J. Stephenson. Second, Millican & Brown. *Cockerel*.—First, J. Stephenson. Second, Walton and Rutherford.

HAMBURGH (Silver-spangled).—First, E. Hudspeth, jun. Second, Walton & Rutherford. *Chickens*.—First, J. Taylor, Frosterly. Second, Walton & Rutherford. Highly Commended, W. Graham, Prynouse.

HAMBURGH (Silver-pencilled).—First, M. Ridley. Second, J. Stephenson. *Chickens*.—First, J. Taylor. Second, M. Ridley.

DORKINGS (Any colour).—First, M. Ridley. Second, J. Walton, Galligill. *Chickens*.—First, Walton & Rutherford. Second, J. Percival.

SPANISH.—First and Second, T. Storey. Commended, I. Walton.

POLANDS.—Second, Wilkinson & Henderson.

BANTAMS.—First, T. Horne. Second, F. Clementson. *Chickens*.—First, Millican & Brown. Second, J. Gibson.

COCHIN-CHINA.—First, J. Dryden. Second, T. W. Dickinson. Commended, J. Pickering; J. Dryden.

DECKS.—First, Kirsopp. Second, I. Walton.

ANY VARIETY.—*Hens*.—First, Millican & Brown. Second, Wilkinson and Henderson. Highly Commended, Millican & Brown; T. Brown.

PIGEONS.—First, W. Graham. Second, R. Walton.

CANARIES.—*Belgian*.—First, J. Douglas, Stanhope. Second, J. Nicholson, Alston. *Norwich*.—First, R. Milburn, Tow Law. Second, J. Douglas.

LIZARD (Any other variety).—First and Second, J. Douglas. *Common (Yellow)*.—First, B. Dryden, Nenthead. Second, J. Nicholson. *Common (Buff)*.—First, J. Hind, Nenthead. Second, T. Wilkinson. *Common (Yellow)*.—First, T. Wilkinson. Second, W. Thompson, Nenthead. *Common (Green)*.—First, R. Milburn. Second, T. Wilkinson. *Common (Cinnamon)*.—

—First and Second, J. Stephenson. Highly Commended, J. Douglas. *Common*.—First, T. Wilkinson. Second, W. Thompson.

GOLDFISH.—First, G. Hopkins, Nenthead. Second, R. Milburn.

BULLFINCH.—First and Second, W. Hetherington, Nenthead.

MOLE (Nearest a Canary).—First, R. Milburn. Second, W. Hodgkinson, Nenthead.

EXTRA PRIZES.—First, T. W. Dickinson. Second and Highly Commended, J. Stephenson.

The Judge was Mr. E. Hutton, of Pudsey, Leeds.

NEWARK POULTRY SHOW.

The Newark Poultry Society's first Show was held in the Corn Exchange on the 16th and 17th inst., when upwards of 400 pens of Poultry and 200 of Pigeons were shown. The *Spanish*, *Dorkings*, *Cochin-Chinas*, and *Beahna Pouter* were all very good. *Game* were also very superior, especially those in the class for Black-breasted and other Reds. Of *Hamburghs* the Golden-spangled were poor in quality, but the Silver-spangled were good. Of the *Silvers* the entries were few, but there were some good pens among the Silver. The *Houdans* were good, and the first-prize pen one of the best we have seen. Of *Game Bantams* there was a brilliant gathering, and the first-prize pen of *Silberights* was beautifully laced. The White and Black *Bantams* were good, especially the first-prize pen of Blacks.

The *Tucks* were good, but the *Rouens* as a class surpassed the *Aylesbarys*. *Turkeys* were very good, but *Geese* few, and nothing superior.

Of all the varieties of *Pigeons* there were very superior birds exhibited. It was on the whole a most excellent Show, and great praise is due to Mr. H. Tomlinson, the Hon. Secretary, for his exertions, to which the success is greatly attributable.

SPANISH (Black).—First and Second, F. James, Peckham Rye. Third, J. Walker, Newark. Highly Commended, J. R. Rodbard, Winton, Bristol. Commended, Messrs. Birch & Boulter, Sheffield; Hon. Miss Douglas Pennant, Penrhyn Castle, Bannor.

DORKINGS (Any colour).—First, Duke of Newcastle, Chamber. Second, H. Lingwood, Barking, Needham Market. Third, G. Clarke, Long Sutton. Highly Commended, H. Savile, Ollerton, Notts. Commended, O. E. Cresswell; J. Smith; J. Elgar, Osamthorpe Hall, Newark.

COCHIN-CHINA (Buff or Cinnamon).—First, H. Juppelbeck, Moseley, Birmingham. Second, R. White, Sheffield. Third, Duke of Newcastle. Highly Commended, Col. Stuart Wortley, Grove End Road, London; G. A. Crowe, Etwell, Derby; A. P. Burnell, Southwell.

COCHIN-CHINA (Any other variety).—First, T. M. Derry, Galley. Second, J. F. Lowerside. Highly Commended, J. Staley, Collingham, Newark; F. D. Johnson, Birmingham; R. White.

BANTAM (Any colour).—First, Miss A. Hart, Alderwasley, Derby. Extra First, H. Lucy, Heblen Bridge. Second, R. W. Boyle, Galtmire House, Bray, Co. Wicklow. Highly Commended, H. Lucy; M. A. Dixon, Cotgrave; W. Pares, Oakbrook, Derby; W. O. Quibell, Newark.

GAME (Black-breasted and other Reds).—First, Duke of Newcastle. Extra First, E. Jarvis, Mansfield. Second, Rev. W. J. Mellor, Clwrick Rectory. Highly Commended, Rev. W. J. Mellor; R. Swift, Southwell.

GAME (Any other variety).—First, R. Swift. Second, R. Pashley, Workson. Highly Commended, W. H. Wheeler, Carlton, Notts. Commended, Rev. W. J. Mellor; Miss E. Crawford, Farusfield, Southwell.

HAMBURGH (Gold-spangled).—First, J. White, Whitley, near Wakefield. Second, S. & R. Ashton, Mottram. Commended, H. E. Emberlin, Oadby.

HAMBURGH (Silver-spangled).—First, H. Pickies, jun., Easby. Second, S. & R. Ashton.

HAMBURGH (Gold-pencilled).—First, R. J. Boulton. Second, W. H. Tomlinson.

HAMBURGH (Silver-pencilled).—First, E. Comber, Warrington. Second, J. W. George, Beeston Podge. Third, Duke of Newcastle, Chamber.

CHIEF-COCHIN (Any colour).—First, Col. Stuart Wortley. Second, Hon. H. W. Fitzwilliam, Wentworth Woodhouse. Third, National Poultry Company.

LA FLÈCHE (Any colour).—First, National Poultry Company. Second, Col. Stuart Wortley.

HOUDANS (Any colour).—First, W. O. Quibell. National Poultry Co. Third, J. Elgar.

GAME BANTAMS (Any variety).—First, J. Crossland, jun., Wakefield. Extra First, R. Swift. Second, Rev. E. C. Tiddeman, Childerditch Vicarage. Highly Commended, E. Toder, Little Carlton, Newark; Rev. W. J. Mellor; E. Crawford; G. Heafford, Loughborough; W. Parker, Clay Cross; E. Bullimore, Foston.

BANTAMS (Gold or Silver-laced).—First, W. H. Tomlinson. Second, H. Draycott, Humberstone. Highly Commended, J. Smith; T. Davies, Newport, Mon.

BANTAMS (White, Clean-legged).—First, Rev. F. Tearle, Newmarket. Second, Rev. O. E. Cresswell, Haworth. Highly Commended, J. R. Jessop, Hull; S. & R. Ashton.

BANTAMS (Black, Clean-legged).—First, W. H. Tomlinson. Second, J. H. Bradwell, Southwell. Third, H. M. Maynard, Ryde, Isle of Wight. Highly Commended, H. Draycott; W. H. Tomlinson.

ANY VARIETY.—*Cock*.—First, Miss E. Crawford. Second, H. Savile. Third, National Poultry Company. Highly Commended, Hon. Miss Douglas Pennant; R. Pashley; T. Baker, Leicester; Mrs. E. Cross, Appleby Vicarage, Briggs; M. A. Dixon; P. Middleton, Newark.

DECKS (Rouen).—First, M. A. Dixon. Second, J. White. Highly Commended, J. W. Harrison, Spalding.

DECKS (Aylesbury).—First, J. W. Harrison. Second, J. Hornsby, Grantham. Highly Commended, Rev. G. Hadley; W. Pares.

GEES (Any variety).—First, R. Bentley. Second, Rev. G. Huxter. Highly Commended, R. E. Toder; National Poultry Company; H. Savile; T. Honker, Penridge.

TURKEYS (Any variety).—First, Rev. W. J. Mellor, Clwrick Rectory. Second, W. Sanday, Holme, Pierpoint. Third, J. H. Braikenridge, Chew Magna. Highly Commended, Miss C. Fillingham, Newark.

SELLING CLASS.—First, Hon. Miss Douglas Pennant. Second, Rev. J. Chapman, Elkesley Vicarage. Third, T. Rogers, Walsall. Fourth, R. Swift. Highly Commended, R. E. Toder; National Poultry Company; Hon. Miss Douglas Pennant; Duke of Newcastle; R. Pashley; H. Marshall, Cropwell Butler; J. J. Berry, Sheffield; J. Johnson, Newark; Lieut-Col. Eyre, Newark; H. Savile; A. H. Verity; J. Marchant, Halifax; W. O. Quibell; W. H. Tomlinson.

PIGEONS.

CARRIERS.—*Cocks.*—First and Second, F. Crossley, Elland. Commended, J. Deakin, Sheffield. *Hens.*—First, J. Hawley, Bingley. Second, H. Headly, Leicester. Highly Commended, F. Crossley.

POUTERS.—*Cocks.*—First, F. Crossley. Second, C. Bulpin, Bridgewater. Highly Commended, H. Draycott; J. Jaylor. Commended, J. Hawley.

Hens.—First and Second, F. Crossley. Highly Commended, J. Hawley.

TUMBLERS (Almond).—First, F. Crossley. Second, J. Hawley. Highly Commended, C. Martin, Chorlton Grove, Manchester.

TUMBLERS (Any other variety).—First, F. Crossley. Second, J. Hawley. Highly Commended, J. W. Edge.

BEARDS.—First and Second, W. H. C. Oates.

BARBS.—First, Rev. W. J. Mellor. Second, T. Hives. Highly Commended, Rev. W. J. Mellor; F. Crossley.

JACOBIANS.—First, W. H. C. Oates. Second, C. Bulpin. Highly Commended, F. Sales. Commended, J. Hawley.

OWLS.—First, F. Crossley. Second, J. Fielding, jun. Highly Commended, T. Hives; J. Fielding, jun.; H. Yardley; F. Crossley; R. Siddall; F. Sale.

TRUMPETERS (White).—First and Second, W. H. C. Oates. Highly Commended, F. Elze; C. Bulpin; W. H. C. Oates. Commended, J. Hawley.

TRUMPETERS (Any other variety).—First, Rev. W. J. Mellor. Second, C. Bulpin.

FANTAILS.—First, J. Hawley. Second, J. W. Edge. Third, C. Bulpin. Highly Commended, C. Bulpin; H. E. Emberlin.

TURBITS.—First, H. Mapplebeck. Second, J. Thompson. Highly Commended, C. Bulpin.

ANY NEW OR DISTINCT VARIETY.—First, H. Draycott. Extra First, National Poultry Company. Second, J. E. Hodges. Highly Commended, H. Draycott; J. Hawley; H. Yardley; C. Bulpin; F. H. Paget; W. H. C. Oates.

WINNER OF MOST POINTS.—Cup, F. Crossley, Elland, Halifax.

SELLING CLASS.—First, J. Hawley. Second, S. & R. Ashton. Commended, J. W. Edge; C. Bulpin; T. C. Marshall; J. Taylor; C. Martin; F. H. Paget; J. Walker.

JUDGES.—Mr. W. B. Tegetmeier, London; Mr. T. J. Charlton, Bradford; and Mr. W. Harvey, Sheffield.

THE RABBITS AT THE HANLEY SHOW.

ALLOW me to make a few remarks as to the regulations of the classes for Rabbits. There were three classes, one for the heaviest weight, another for the longest ears, and a third for "any other variety, irrespective of length of ears or heaviest weight." In all these classes Lop-eared Rabbits took all the prizes. Of course they have a right to do so in their own class; and at present I believe they are the heaviest kind of Rabbits. They have, consequently, as good as two classes devoted to them, and against which no one can say anything; but I do not, and I think exhibitors will agree with me, think it fair to admit Lop-eared Rabbits into the "any other variety class," for it is well known amongst Rabbit-breeders that any variety of Rabbit has little, or no chance against the beautiful Lop-eared Rabbit. I therefore hope that the Committee of the Hanley Poultry Show will make some alteration in their schedule as to the classes for Rabbits before another Show.—BUNNY.

PIGEONS.

MATING WITH MEALY—ROUP.

MR. HUIE's article on "Pigeons," in last week's Journal, contains some valuable information, and I think the thanks of fanciers are due to him for it. I believe, however, that he is mistaken in some of his statements, especially where, speaking of matching Yellow Pied Pouters with Mealies, he says, "the produce would be mostly Mealy Yellows, with strongly defined bars." Now, I think this requires qualifying a little, for it surely must greatly depend on how the Yellows are bred. Last spring I matched a Mealy cock with red bars to a Yellow hen bred from a Red, and the produce were three Red cocks, with scarcely any sign of a bar, and a good colour. Besides, are there not such birds as Mealies without any bars at all? If not, I shall be glad to learn what is their proper name.

I can confirm what Mr. Huie says with regard to matching Blues and Whites. It strengthens the constitution of the latter, and the produce will frequently be Whites with blue-splashed tails, which birds, matched to pure Whites, will throw more pure Whites than splashes. I think this is what Mr. Tegetmeier wished to illustrate when he spoke of "the slavish fear of breeding away from some one particular colour." I should not fear, either, to match a White with a Pale Red; of course some splashes would be among the progeny, but they

would be capital birds to match to Whites again. In my opinion this intermixture of colour is the only sure way of getting strength and vigour in one's birds; but I would never cross a Red with a Blue. I should think it the worst cross of any. The produce are smutty Reds, with the edge of each red feather tipped with a bluish grey, which gives the birds a sort of pencilled appearance on the wings. Then the produce of such birds are worse still, even when matched to Reds—Mealies, smutty Blues, Chequers, and Reds, with the traces of the Blue strain still left.

I find roup in Pigeons easily cured by administering a pill every night, about the size of a bean, made of equal parts of gentian, ginger, Epsom salts, and flowers of sulphur, mixed together with treacle to make it bind. This will also cure it in poultry, unless a very bad case. I found the recipe in the "Diary for the Dairy, Piggery, Poultry Yard, and Apiary," by an Essex amateur, which used to be published annually.

I hope Mr. Huie will be induced to give us more of his experience in Pigeon-breeding.—ALFRED HEATH, *Culce*.

THE CANARY CLUB PROJECT.

THE very excellent remarks of your correspondent, Mr. Bedwell, upon this head must, I feel assured, meet with the hearty concurrence of the large body of Canary exhibitors who contribute these beautiful specimens so extensively at the principal shows in the kingdom, foremost amongst which are the Crystal Palace, the Southampton (Hampshire Ornithological Association), the Sunderland (North of England Ornithological Association), and other shows held in the midland counties.

Your correspondent asks some one to assist him in this work, and very handsomely augments his worthy suggestion with the offer of a substantial subscription towards carrying out the object in view. As a secretary of some ten years' experience in the management of these annual displays, I am induced to offer one or two suggestions, which I hope will not be lost sight of should the subject contemplated be carried into effect.

In the first place, a club established on a good, sound, and popular basis would naturally assist local exhibitions in many ways, such as issuing a code of rules for general management of shows, and the adoption of a "Standard of Excellence," whereby exhibitors may be made fully acquainted with the important points of excellence necessary to success. This course, once adopted, will undoubtedly bring under the notice of those interested in the management of shows of this character gentlemen competent to adjudge the Canary prizes, at present unknown to many. I make these remarks without the slightest reflection upon those gentlemen upon whom this difficult and oftentimes unthankful office falls, but in the hope that we shall obtain an infusion of new blood in the list of Canary judges, which, I believe, is acknowledged by men of no small experience in these matters to be a subject quite necessary to the progress of this branch of ornithological study.

Your correspondent refers to one of the most important features of a Canary club—that of holding exhibitions in one of the principal towns every year. Now, to make the holding of these shows a matter of sure success, they should not be held too close together. For instance, they should be held in various parts of the kingdom, adopting some towns where local committees of known experience can be formed to carry out the necessary work.

Another suggestion is that the club be made as self-supporting as possible. One source of its income could be derived from sums being contributed by the innumerable committees of local shows, who, in return, should be allowed the privilege of electing members from their respective committees to co-operate with the principal managers of the club. And further, each subscribing committee should be furnished with copies of the "Standard of Excellence," and be granted such privileges in accordance with the contributions, which should, in my opinion, be on a sliding scale, commencing, say, at 10s., and for each additional 10s. subscribed the greater benefits should be given.

One office I certainly should like to see the club should be called upon to perform,—that in case of any extraordinary dispute arising between a committee and exhibitor, which could not be settled by the local committee to the satisfaction of both parties, that the matter in dispute be referred to the stewards of the club, whose decision should be final. These and innumerable other matters of more or less import could

be introduced into the management, and, I believe, would conduce to the success not only of the club itself, but of the societies who would be in union with it. I therefore venture to hope that the large body of Canary exhibitors throughout the country will avail themselves of this opportunity, and assist Mr. Bedwell to carry into effect his excellent suggestion.

—PHILIP WARREN, Southampton (Hon. Sec. Hampshire Ornithological Association).

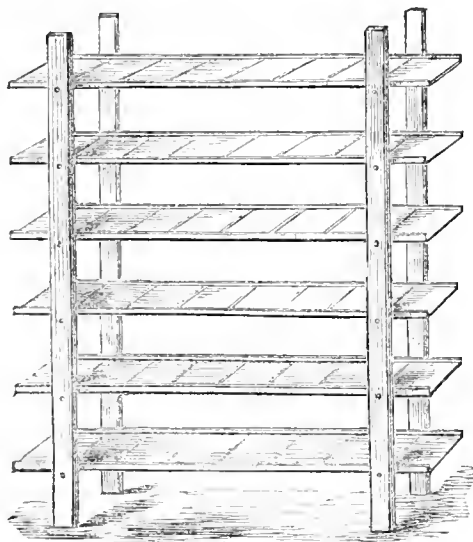
SILKWORM-REARING IN ENGLAND.—No. 5.

The most essential requirement in silkworm-rearing is a suitable place to contain the worms. Such a structure in Italy is called *Il castello*, or the castle, and may be manufactured after various designs. One of the most simple and useful is formed by means of four upright posts, which support any given number of stages or shelves, on which the worms are kept. Such a structure must be adapted in size not only to the room in which it is placed, but also to the number of worms to be reared. It is customary to have one for every half-ounce of eggs to be hatched, and most writers allow to the same, in a general way, from five to six stages.

I shall describe one of six stages of full size, allowing somewhat more space than usual; for I am fully convinced that silkworms require more room than they ordinarily obtain. Persons who rear worms from many ounces of eggs should have a castle or two to spare.

My castle has six stages, 12 feet long and 4 feet wide. Each shelf thus contains 48 feet of space, and the whole six 288. Half a dozen such castles could stand end to end, thus making one, if required, or in any other way suited to the room.

The easiest and best way of putting together the tables or stages is to take two splines, 1 inch by 1½, to form the sides. These are placed parallel to each other at 4 feet apart, and are to be connected by nine cross half-inch splines, let into the sides at the bottom, nailing them securely with 1½-inch wrought nails, so as not to split the wood. Thus the stage will be formed into eight compartments, each 18 inches wide, the distance at which each cross piece will be from the other. This frame thus finished should be strong and firm, with its inch edgings upwards, which will serve to prevent the silkworms falling off.



The next proceeding is to cover the inside with some material, which, though tolerably close, will yet admit the air. For this purpose bamboo canes, split up, are much used on the Continent. Some people only put on thinnish wire, forming meshes about 3 inches square, and then cover with rather stiff paper. This kind of netting is very suitable, but I do not like the paper covering, for it will not last much more than one season. I substitute canvas, or some cheap grey calico, which can be tacked on. This, when dirty, can be removed to be washed. The next article I shall more particularly name for covering these tables, instead of the wire, &c., would be reeds, which can be bedded over the cross pieces and secured down by

twine or thin laths nailed to the splines. The table thus covered will present one even surface for the worms, and the cross pieces below will be out of sight, but will be useful, not only to hold the frame together, but as supports over which to place the materials when the worms spin. If desired, the ends of these tables could have cross pieces like the side rails; thus there would be a protection against the worms falling from thence, and equality all the way round. Where, however, these castles are erected to stand end to end, this precaution is not required.

It now remains to prepare four square or round posts, very strong and straight, about 3 inches in diameter and the height of the room, which for this castle should be at least 10½ feet. These posts are each to have six holes, 1 inch in diameter, drilled through them, all in a perpendicular line up their sides, to receive 6-inch pegs—viz., 3 inches will be inserted in the posts and 3 inches will project from them. These pegs are to be about 18 inches apart, 18 inches from the floor of the room, and rather more from the ceiling. These prepared posts are then placed upright between the floor and ceiling, and made quite secure by wedges if necessary, or if they could be let into the ceiling, and fastened to the beams there, all the better; at any rate they must be secured firmly.

The posts are placed upright in pairs, with the pegs facing, at 4 feet apart, or the width of the stages they have to support, and which rest on the pegs, one above the other, at 18 inches apart. The ends of the stages may project beyond the poles nearly a yard, and be secured to the pegs to avoid the danger of shifting. Some persons instead of pegs put pieces of wood or rails entirely through from post to post, forming a kind of ladder, on the staves of which the stages are laid, but either mode will answer the purpose well if stability be insured.

The above description of a silkworm house will answer for all systems generally adopted, whether on a large or small scale. Some are erected to swing by ropes from balks in the ceiling, without touching the floor; some are suspended from the walls, and others have the posts provided with feet, which are very necessary when the castle is small, and does not extend up to the ceiling. Such a structure of half the size I have described could be made for even parlour use, with any polish and embellishment desired. I have studied economy and use, and leave all decorations to the will of my readers.

In case of erecting stages round the walls of a room, to which there is no objection provided the ventilation is not impeded and the walls are dry, they must not be above 2 feet in width; for, unlike the castle I have described, no person can go round them to perform the necessary work in attending the worms. Two feet is a sufficient distance for a moderate-sized person to reach without incommoding the insects.

There is a custom among many silkworm-rearers to make use of boards for these stages, but they are not so suitable. Expert rearers condemn them. The air cannot penetrate to dry the worm's excrements, &c., which, collecting, soon putrefy, producing an unhealthy fermentation beneath the worms, giving off carbonic acid gas, which is very injurious, laying the foundation of all the direful diseases which attack silkworms. I must, therefore, impress fully on my readers the necessity of using stages, of whatever material constructed, through which the air can pass.—EDWARD HARMAN, JUN.

UTILISING AND UNTING CONDEMNED BEES.

ONE of the most interesting, and certainly not the least profitable modes of turning a moderate amount of practical apiarian knowledge to account, is, during the autumn, to sally forth and collect all the condemned bees from farmers and cottage bee-keepers within a radius of from four to five miles, and having expelled them from their habitations by driving, convey them to one's own apiary, there to be applied either to the strengthening of such of our own colonies as may happen to stand in need of a reinforcement, or to be established as new stocks, and by a liberal supply of simple syrup fed up to a sufficient weight to stand the winter. It is, of course, to be hoped that in process of time there will remain but few bee-keepers who have not attained such a very moderate amount of practical bee knowledge as may enable them to drive and unite bees for themselves; but pending the arrival of that golden age, whose advent I am always ready to assist in bringing about, but which still appears to remain so very far distant, the more advanced bee-keeper may find both pleasure and profit in devoting some of the glorious afternoons with which we are

favoured during the autumn to bee-driving expeditions—a pleasure which must be increased by the reflection that he is thereby rescuing countless thousands of industrious little labourers from a violent and untimely death, and by profits, the value of which can scarcely fail to be enhanced by similar humane considerations.

When about to start upon one of these expeditions, I secure beforehand the services of a small boy, who propels before him a nondescript kind of trap, composed of the wheels, lower frame, and springs of a child's perambulator, from which the seat has been removed and replaced by a horizontal platform, formed by a light wooden frame nearly 4 feet long by 15 inches wide. Upon this are ranged four common straw hives, tied up in as many bee cloths, and a small leather travelling bag, the whole being well secured by a piece of stout patent sash-line, passing from front to rear, and strung through a loop in the top of each hive and through the handles of the bag. This latter contains the following articles: A piece of coarse towelling 1½ yards long by 8 inches wide, rolled up, with the end secured by a stout pin, and 6 yards of small cord wound round it, a fumigating tube charged with cellar fungus, a box of matches, a short iron skewer, a small packing needle, threaded with a yard or so of stout twine, two or three little boxes made of perforated zinc, and fitted with sliding covers, a set of three honey knives, a couple of sheets of newspaper, a piece of half-inch wood, 18 inches long by 8 inches wide, one or two strong quill feathers, half-a-dozen pieces of small cord or stout twine, each from 1½ to 2 yards in length, and a veil for shielding the face in case of necessity, which latter is, however, but seldom used.

Arrived at the scene of action, I first ascertain what stocks are to be operated on, mark every one distinctly, either by at once removing the straw hackle or in some other equally unmistakable manner, and obtain the loan of an empty bucket, with a couple of kitchen chairs, all of which are forthwith conveyed to the apiary.

And here, whilst repeating the confession which I made in page 188, that I know of no mode of uniting adult bees, which is free from the chance of an occasional failure, I may be permitted to acknowledge my belief that we are indebted to the Rev. P. V. M. Fillenul for the first discovery of a fact upon which are based all my more recent modes of uniting bees, and by which it seems to me that the risk of failure is reduced to a minimum. It is, I believe, some eighteen years since that accomplished apiarian, writing under the *nom de plume* of "A COUNTRY CURATE," informed the readers of THE COTTAGE GARDENER that he had found that if the inhabitants of two or more stocks of bees were driven in succession into the same empty hive, a peaceful union would be the result. A very considerable amount of experience having satisfied me of the general truth of this axiom, it will be found that the manipulations which I am about to describe are substantially based upon it.—A DEVONSHIRE BEE-KEEPER.

(To be continued.)

OUR LETTER BOX.

LICE ON FOWLS (D. H.).—Complaints of lice always come after a wet time. When all the land is saturated, birds cannot find their dust bath, and that is the only remedy or preventive for this affliction. Every poultry run should be provided with some sheltered place, and this should be supplied with fine dust, road-grit, and bricklayers' rubbish in heaps. To these, or to either of the first, should be added some black brimstone, of the commonest sort, in the proportion of a pound to a bushel of sand. The birds will show their need of it by running to it, as a thirsty man does to water. There are other parasites besides lice, and some of them are visible only through microscopic agency. By that help they may be seen clustering round the poll of a chicken in heaps, or suspending themselves in bunches. The immediate cure for that is to rub oil on the poll, along the backbone, and under the wings. They are the parts specially chosen by these pests. We believe this will cure yours. We have treated your question generally, because we think that by making proper dust baths you should have no such plague among adult fowls. Chickens when out of health will be subject to them. We do not think cinders or ashes, except wood ashes, make good dust baths. Cinders are worse than nothing, as they stick in the feathers and torment the birds. If you have given such they may partly cause the discomfort manifested by the birds. Partridges will teach you a lesson on dust baths. When we have had long wet weather you will find in every light-soiled beetling bank under the naked roots of trees, regular recesses formed by the birds using it for their baths, and the traces left of its constant use.

PLUMAGE OF DARK BRAHMA POOTRA COCKEREL (John Milton).—Black feathers tipped with white are not objectionable on the thighs of a Brahma cock.

POULTRY VARIETIES IN ONE RUN (J. H.).—The effects of promiscuous intercourse we believe not to cease until a hen has laid her whole season's eggs and become broody. Some poultry-keepers, however, think that after three weeks the effects have passed away.

BRAHMA POOTRAS (E. H. W.).—There are no such birds as "White" Brahmas. They are called "Light;" the body is white, but the backle, tail, and flights are black. Coloured Brahmas will do very well in confinement, quite as well as or better than Cochins. Dorkings will not do in confinement. We always shudder when we hear of fowls in a yard. We picture to ourselves one paved with flagstones. Some years since we were staying in St. Leonard's, in Eversfield Place, and looking out of the back window could see half a dozen melancholy birds standing about on one foot on large flagstones that were carefully washed every morning—flat-footed birds that had lost the habit of scratching, that only saw the sun for half an hour in the twenty-four, that turned with loathing from the "tousjours perdrix" of the clean barley lying on the stones to the variety of the dust heap. Fowls will do us anything but flagstones, bricks, or boards.

EARLOBES OF BLACK BANTAMS (B. H. M.).—Black Bantams must have white deaf-ears. They are by no means necessary for White or other colours.

CROOKED BREAST (R. H. I.).—This deformity in fowls usually arises from constitutional weakness—like the rickets in children. The chickens are stimulated into rapid growth, so that their amount of muscle is far out of proportion to the growth of the bones. These being in a gristly state, and the muscles on one side being more developed than on the other side, the breastbone is soon pulled into a crooked form. Nourishing but not stimulating food, rusty iron in the water trough, plenty of green food, and a good run, are the best preventives. Never breed from a crooked-breasted fowl—"like begets like."

MALT DUST (A Constant Reader).—You may generally obtain malt dust at any corn-dealer's in the country. It may be given as a stimulant mixed with barley meal.

DUCKS (J. T.).—You can keep Ducks in any place, where you can give them an outlet either into a yard, or to grass or garden land. They require but little water, and are by no means dainty. It is not necessary to keep a drake, unless you intend to set the eggs. If you send to our office seven postage stamps with your address, and order "Poultry Book for the Many," you will have it sent free by post. It contains directions for keeping Ducks.

INCUBATOR (A Subscriber).—There are several makers of them, and we cannot venture to recommend one more than the others. You will see the advertisements in some of our back numbers. Write to the makers for information and select for yourself.

ISLE OF PENC.—"T. C. H." will be much obliged by "W. H. K." stating in what atlas or work this island is mentioned.

CANARY SEED (Hercford).—Retailers must have a large profit, or it would not be worth their attention. The portraits you refer to never appeared before in our columns.

CANARIES (Lucien).—If you send twenty postage stamps with your address, and order "The Canary," the book will be sent to you free by post. It contains full directions for their management.

RED LICE IN CANARY CAGE (Burnley).—Lime will not destroy them, but flowers of sulphur rubbed into all the openings, and a little mixed with the sand on the cage floor, will exterminate them.

HEX HOUSE FLEAS (A. D. E.).—Several of the feverfews, especially *Pyrethrum roseum* and *carnium*, if dried and powdered, and sprinkled about the house, are said to drive away fleas.

PIGEONS HAVING INCASED FEATHERS (H. W.).—Your Pigeons have not moulted freely, a general complaint this season, caused by the protracted damp and cold weather after harvest. It is well the feather has fallen out, and if the bird lives it will be replaced by a new one during spring. Indian corn is good feeding; add, if possible, a few small tick beans and vetches, but spare your wheat till the breeding season; the harder the food the better during winter. The short breathing proceeds from weakness, and often appears in Pigeons that have not moulted freely. Keep your birds warm and dry at night, this is of great consequence. Give them plenty of clean water to wash in, daily if possible. Use a large vessel about 3½ inches deep. Washing is life to all birds that do wash. Fill an 8-inch flower-pot saucer with fresh garden or field earth, free from manure or chemicals, and mix well through it half a tea-cupful of salt; all your birds may peck freely at this mixture, of which they are very fond, you will find this improve them quickly both in health and plumage. Should the salt appear to purge (as it may do at first) remove it for a few days. Give plenty of old bruised mortar, and let your birds fly if convenient in dry weather. Your sick birds may have a handful of hempseed once or twice a week, but if the seed is not digested by morning give no more of it.

BARNS FOR SUPERS (C. A. J.).—We use the same bars in supers as in stock hives, but place them a little wider apart, using only eight instead of nine bars in a 13-inch box.

GRATINGS TO EXCLUDE DRONES (Idem).—Gratings with apertures three-sixteenths of an inch wide are used to exclude the queen and drones from supers.

REVOLVING FRAMES (Idem).—We believe that the German centrifugal machine extracts all the honey from combs without injuring them in any way.

SIZE OF NUCLEUS BOXES (Idem).—Our nucleus boxes are 6½ inches wide inside, and accommodate four combs in each at equal distances apart.

COMBS BEYOND THE BARS (Idem).—When there is an overflowing honey harvest bees will crowd every available cranny in their hives with combs, even the space which is left between the ends of the frames and the sides of a Woodbury hive. The occasional slight obstructions thus caused to the removal of the combs can readily be cleared away, and are a much more trivial inconvenience than would be experienced in manipulating frames in an unduly contracted hive.

POULTRY MARKET.—JANUARY 22.

The supply of the market is small, but small as it is, there is scarcely trade enough to consume it. There is great depression in every branch.

	s. d.	s. d.	s. d.	s. d.
Large Fowls.....	3	0	3	6
Smaller do.....	2	6	2	0
Chickens.....	2	0	2	3
Geese.....	0	0	0	0
Ducks.....	0	0	0	0
Pigeons.....	0	10	0	0
Pheasants.....	3	0	3	6
Partridges.....	1	6	1	9
Grouse.....	0	0	0	0
Hares.....	2	0	2	6
Rabbits.....	1	2	1	4
Wild do.....	0	3	0	10

WEEKLY CALENDAR.

Day of Month	Day of Week.	JAN. 30—FEB. 5, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
30	Th	Meeting of Royal Society.	41.4	32.2	38.3	21	46	af 7	44	af 4	6	af 10	55	af 10	6	13	33
31	F	Meeting of Royal Institution.	44.7	30.5	37.6	19	43	7	45	4	31	10	morn.		7	13	42
1	S	Royal Horticultural Society, Promenade.	43.9	31.0	37.5	13	41	7	47	4	58	10	4	0	9	13	51
2	SUN	4 SUNDAY AFTER EPIPHANY.	41.3	31.0	37.5	15	49	7	49	4	28	11	15	1	9	12	59
3	M	Meeting of Entomological Society.	41.3	30.9	37.6	20	38	7	51	4	after.	25	2		10	14	6
4	Tu	Meeting of Institute of Civil Engineers.	44.5	30.4	37.5	19	37	7	53	4	51	0	36	3	11	14	12
5	W	Meeting of Society of Arts and Geological Society.	45.5	33.3	39.4	19	35	7	54	4	48	1	42	4	12	14	17

From observations taken near London during the last forty-one years, the average day temperature of the week is 45.1°; and its night temperature 31.3°. The greatest heat was 57°, on the 1st, 1852; and 3rd, 1859; and the lowest cold 8°, on the 31st, 1857. The greatest fall of rain was 0.75 inch.

BRUSSELS SPROUTS.

TO grow this useful winter vegetable successfully the seed should be sown in the first or second week in January in pans or boxes, and placed in a cold pit, late Peach house, vinery, or any place where there is sufficient warmth to cause the seeds to vegetate, and where the young plants may have abundance of air at all times without being injured by frost. The seeds should be scattered thinly over the surface of the soil in the pans or boxes, and just covered with any light soil. If the seed is sown too thickly, and the pans should have too much water at any time during the dull and sunless weather generally prevailing at this season, there is danger of the seedlings damping-off. The pans should have only just sufficient water to keep the young seedling plants from flagging; if the soil is tolerably moist when the seed is sown no water will be required before the end of January or the second week in February.

About the end of February the young plants should be pricked-out, about 3 inches apart, into other boxes or pans, and placed in a position where they will have the benefit of a little more warmth till the end of March. During this time they should be kept rather dry, giving them water only when they show signs of flagging. The soil into which they are pricked-out should not be pressed too firmly into the pans or boxes, and should be composed of two-thirds leaf soil and one-third loam. In this the young plants will root very freely without making very much growth; the scanty supply of water will also prevent their growing very rapidly. During this time they will be gaining strength and maturity, and will show the benefit they have derived from their early treatment.

On planting-out in the open ground, about the second week in April, the young plants should be carefully shaken out of the soil they have been growing in, when it will be found that each plant has a fine mass of roots attached to it. Having selected as many plants as will be considered necessary for the purposes of the family, they should be carefully planted-out in an old pit or frame, about 6 inches apart, in good soil. Here they should have all the air that can possibly be given them. After they have been planted a week or ten days, about the first week in May the point of each plant should be pinched-out, and as soon as the plant begins to push-out side shoots, three or four of the most prominent should be selected to form the future stems, and all the others should be removed. This is the most important point to which I wish to direct attention, for the adoption of the practice will enable one to grow four times the quantity of sprouts of first-rate quality on one plant that could be obtained in the ordinary way of cultivating Brussels Sprouts. The plants may remain in this position till the first week in May, when they may be removed to the open ground, and be permanently planted.

Having described the early spring treatment from the sowing of the seed to the period for planting-out in the permanent beds, I will proceed with the after-treatment. It is necessary that the soil should be good and

deep. Having selected the piece of land in which the plants are to be grown, place regularly over it a good layer of manure about 2 inches thick. This should be worked into the bottom of each trench as the ground is trenched or dug. The ground may be thrown up in little ridges or left in rough spits, but it is important that it should be prepared in this way for the crop as early in the autumn or winter as may be convenient. In the first week in May, when the plants are ready for planting-out, the ground may be slightly dug over for the purpose of levelling it; drills should then be drawn at 4 feet apart, in which the plants may be planted after taking them from their spring quarters with good balls. They should be carefully planted with a trowel, not with a dibber, 3 feet apart. The soil must be pressed firmly about the roots, and the operation of planting should be finished by giving them a good watering, and placing a stick to each plant.

The stick should be pushed into the ground to a proper depth to enable it to support the four stems when sufficiently advanced. It should be about 4 feet long; this will admit of a length of 1 foot being pushed into the ground, leaving 3 feet of it above the surface, to which part the four stems may be made secure. Each shoot should be tied to the stick as soon as it has grown 4 or 5 inches long; this will cause the shoots to grow perfectly straight, and prevent their being split off from the parent stem by high winds; and as the shoots mature their growth, they should be gone over occasionally, and fresh ties added to keep them in their places.

During the summer months the plants should be copiously supplied with manure in a liquid state; the decaying leaves should also be removed. This will allow the small sprouts to develop, and will also permit the air to circulate freely amongst them, causing them to assume that dark green colour which adds so much to their appearance and flavour. If Brussels Sprouts are wanted early in the autumn, the tops should be broken out of a score or two of the plants, this will cause them to mature their side sprouts much earlier than they would otherwise do.

To have a regular succession of Brussels Sprouts from August to April it will be necessary to make three sowings—namely, the first in the first or second week in January; the second in the first week in February; and the third in the first week in March. The first two sowings should be treated as previously recommended, but the third may be made in the open ground. The plants from this sowing should not be stopped, as there will not be time for them to mature their new stems and to clothe them with young buds before the winter sets in, except in very warm localities.

Many advantages will be gained by cultivating Brussels Sprouts in the way I have described, and the trouble is not so great as at first it may appear. I feel confident that even market growers would find it would pay them to cultivate their Brussels Sprouts in this way, for each plant may be made to produce four times the number of sprouts, and these of a much superior quality to what we commonly see. Generally a large number of the plants in every piece of Brussels Sprouts will be found either blown over

by the wind or borne to the ground by their own weight; the consequence is that one-third of the sprouts is rendered useless and unfit for sale, whereas if grown in the way I recommend not a sprout need be spoiled, and all are rendered saleable. Besides, for a gentleman's garden, when we take into consideration the neat appearance of a plantation of Brussels Sprouts grown as described above, I think I may safely call the attention of cultivators of this useful vegetable to the system of culture I have described, well knowing that the result to be gained will more than repay them for the additional trouble they may be put to.—J. WILLS.

CULTURE OF LAPAGERIA ROSEA.

LAPAGERIA ROSEA is one of the finest greenhouse climbers in cultivation, and, what adds to its value, it flowers during the winter months, when almost any flower is welcome. It is, however, not so universally grown as it deserves to be, and when it is to be found in collections of plants it is not always in such good health as desirable. A few years ago plants of it were expensive, it being generally propagated by layering; but now seeds are ripened in the London nurseries, and hundreds of seedlings are raised. This is a much preferable way of propagation. Plants can now be purchased at half a crown each—a price which places it within the reach of the most humble cultivator of greenhouse plants.

I shall suppose that a small plant has been obtained, and that it is growing in a 60-sized pot. It ought to be placed at once in the warmest part of the greenhouse, for although it is a greenhouse plant, it will do with more heat and less air than most. I have cultivated Lapagerias in the plant stove, but I do not recommend stove culture for them, as the plant is more liable to be attacked by parasites. That most difficult to dislodge after it has gained any degree of ascendancy is the mealy bug, of which the strips of matting that the shoots have been tied-in with are favourite hiding places, and the ties must all be undone that the plant may be washed, much damage resulting to the plant during the operation. In the stove it is also liable to the attacks of thrips, which can easily be destroyed by smoking with tobacco, and the sort I find most effectual is shag, at 2s. 6d. per lb., which is cheaper than most tobacco paper at 1s. 6d. I have also found that in a stove neither the flowers nor leaves exhibit the same bright healthy appearance which they have when the plant is growing in a greenhouse temperature.

When the plants are well established in 60-sized pots they ought to be shifted at once into pots 6 inches in diameter, inside measure, taking care that plenty of drainage is placed carefully in the pot first, and over the drainage a little rough turfy peat, from which the finer particles have been sifted. The materials in which the plants are to be potted ought to be turfy peat torn to pieces instead of being chopped up with a spade, and used without any admixture, except some silver sand if the peat is deficient in sand, which some sorts of peat require, and of which others contain enough naturally. The addition of a little charcoal is also sometimes beneficial.

The Lapageria requires plenty of water during the growing season, but it can be overwatered; and if the material in which it is potted becomes sour, either from careless watering or bad peat, it will soon become unhealthy. There are some sorts of peat which retain the water until they are converted into a soapy mass, from which every particle of fibre will have disappeared; and if a handful is taken up and squeezed, the inky water will ooze out between the fingers. In peat of this sort no plant will thrive, hence the importance of selecting good peat; if on squeezing it in the hand it leaves a stain it may be safely rejected as unsuitable for any gardening purpose.

The Lapageria is a slow-growing plant, and will not make much progress the first year; but in twelve months, if the pot is full of roots, it may be shifted into a 9 or 10-inch pot, and when it has filled that size with roots, which may be in twelve months more, it may be shifted into any size ranging from 12 to 18 inches, and a trellis must be provided for it. That which I admire the most is one I have seen in use for the purpose at Messrs. Veitch's, of Chelsea, and which is somewhat umbrella-shaped. The shoots are trained up what may be called the handle of the umbrella, and under and around the framework. They ought to be trained so that the greater part of the flowers may hang from the outer circle, and in this way the plant has a most charming effect.

I have proved from experience that the Lapageria succeeds well when cultivated in pots, but it does equally well, if a suitable position can be obtained for it, when planted out in the greenhouse or conservatory. A border ought to be prepared for it by excavating the soil to the depth of 3 feet, placing at the bottom of the border 1 foot of broken bricks, and over these a layer of turfy peat with the grass side downwards, filling up with the same material as previously recommended for pot culture, only using it rougher. The lumps of charcoal should be from the size of a pigeon's egg to that of a man's clenched fist. Treated in this way it will grow freely, and will require little attention, except training the shoots, not allowing them to twist round wires. It is also much benefited by being occasionally syringed during the summer months.—J. DOUGLAS.

HEATING BY STOVES.

I, as well as other readers, feel indebted to "J. W." for his interesting article on stoves for small greenhouses, vineries, and other structures, more especially as many who have small houses are deterred from using them, by many reported failures of those who have tried them, and given them up because they found the simple management too troublesome. I have frequently stated that for small or even moderate-sized single houses there is no mode of heating that will compare with the stove, as respects economy of fuel. I do not even object to an iron stove, but I would like these two conditions to be fulfilled: First, the stove should be so large as to have the firebox lined with firebrick, and an open space for fire of 8 or more inches square; this box to stand an inch or two free of the sides of the stove. Secondly, the top should be flat, or level, so as to receive a vessel of water.

"J. W.'s" plan seems to combine most of the good points of the iron stove and the brick stove. There is just one point on which I should like to have a little more information, and that is the length of time the arch of sheet iron (*d.* in the section), may be supposed to last. I am sure that "J. W." will give his assistance here, especially when I assure him that even from my own correspondence such a mode of heating small places is very much considered by those who are able to afford no other mode of heating. From my own experience all plate iron exposed directly to the fire very soon burns out. When iron stoves are used in churches and chapels, and sheet-iron pipes are used to carry off the products of combustion, two or three new pieces are generally required every winter. In this case the smoke and soot as well as the fire eat into the metal, and there would be little or no soot on the arched plate in the section on page 28. True, the plate could be easily replaced, but it would be as well to have an idea of its probable duration.

I have not a doubt but that the plan answers admirably; and it will save the smoke pipe being seen when it can be taken into a back wall, but I do not think the heat will be so equally diffused as when the stove is near the front, or the middle, instead of the back of the house. Other circumstances, however, being favourable, I would prefer even a little larger stove against the back wall of the house, as it interferes less with the internal arrangements.

In the desire for simplicity, the iron casing may even be too complex for some who would like a mellow heat than can be obtained from an iron stove, without extra care and trouble, unless the firebox is free of the sides of the stove. For their sakes, without in the least depreciating the plan of "J. W.,"—quite the reverse—I would say, that they will succeed by following his plan of a firebrick firebox, &c., substituting brick for the sand and iron, carrying the walls up square, and having a plate of iron one-half to three-quarters of an inch thick over the top. This may be let into the bricks with a sand joint all round. If I wished to be particular I would here borrow from "J. W.," and do just what we do with an old iron stove—have a piece of sheet iron over the top, resting at least on 2 or 3 inches of the brickwork, and therefore all that larger than the opening above the fireplace, on this place from 1 to 2 inches of sand, and the heavier plate—say, from a quarter to half an inch thick, above that. In this way, merely by moving the upper loose plate, and taking off the sand, the interior of the stove could be examined at any time.

By such a simple mode, and that also so well followed out by "J. W.," the principle of the Arnott's stove, whether of iron or formed of brick, is so far departed from that after the heat from the fire has come in contact with the top of the stove, there is

no mode resorted to for preventing that heat finding its way to the smoke vent. This could be easily done by fixing a fire-brick or lump in front of that opening, but from 1½ to 2 inches from it, which would cause the heat to beat more against the sides of the stove before escaping by the chimney. So far the theory is right and feasible enough; but in practice, if the smoke pipe goes out at the side of the stove, and if that opening is 6 or more inches from the inside top of the stove, and if the ashpit door is close, from whence the air for combustion almost alone must come, then such partial blocking-up of the outlet is of little or no consequence. Anything of the character of a damper in the smoke chimney would also prove an annoyance.

Some time ago I wrote on the importance of such matters as those above referred to, and without experience I would not have credited that heat could be so regulated and economised—that is, kept in the stove, merely by regulating the air admitted at the ashpit opening. On lighting an old iron stove here, the ashpit drawer is generally pulled out. As the fire burns it is put partly in, and when the fire has fully taken hold the drawer is put in altogether, and three small slits one-eighth of an inch wide and an inch long are left open until the stove and the 3-inch metal pipe through the roof become tolerably warm. A length of about 7 feet of that 9-foot pipe is upright in the house. With air on at the ashpit door, even with these three slits open, the pipe close to the roof will be almost as warm as the stove, showing clearly that then a good portion of the heat from the fuel is escaping into the open air; but when we close two of these air-slits, it is a long time before the heat is at all diminished in the stove, but the upper part of the pipe soon becomes cool, showing that but little heat is escaping into the open air. The regulation of air by the ashpit door has, therefore, a great effect in economising heat, and does, in fact, what otherwise might be effected by blocks and dampers. Every ashpit door left open when the fire is established, proves incontestably, whether connected with a stove, furnace, or boiler, that the fireman is either ignorant or too careless to practise what he knows. Such a simple matter as leaving ashpit doors open in the case of common furnaces is only of little importance where fuel is of little value. I hope that all who have commenced, or intend commencing with these stoves in their small houses, will carefully note the statements as to successful management in "J. W.'s" excellent article.—R. P.

ARAUCARIA CUNNINGHAMII SINENSIS.

We have here three plants of this very ornamental variety, which Mr. Smythe informs me have been planted out on the lawn, and withstood the severity of our winters uninjured for eleven years. It is of a very graceful habit, and a much faster grower here than *Araucaria imbricata*. The tallest is now 6 feet high, 6 feet 6 inches in diameter of branches, and during the last two seasons the leader has made a growth of 18 inches each season.

As this *Araucaria* is said by some to be tender, I should like to hear the experience of any of your correspondents who may have tried it.—Thomas Winkworth, *Elmhurst Gardens, Thetford, Norfolk*.

GALVANISED WIRE FRUIT TRELLIS.

In the *Journal* of January 16th Mr. Radcliffe recommends a galvanised wire trellis for Peach and Nectarine trees; and in the same number Mr. Abbey also recommends galvanised-iron wire for garden walls. On the contrary, I had arrived at the conclusion that galvanised-iron wire is injurious to Peach and Nectarine trees, causing canker in them.

I first saw galvanised wire used some six years ago. It was stretched horizontally in front of the wall at the distance of about 2 inches from it, and had a very neat appearance. I had the management of the trees, and I found wherever any of the shoots were tied too tightly, so that the shoot was pressed against the wire, it would most likely be cankered; and I was confirmed in this on reading an answer to a correspondent in another periodical, wherein it was stated that galvanised wire is injurious to Peach and Nectarine trees. Painting the wires was recommended; but if wires are intended to be painted they ought not to be galvanised first, as wire is made exceedingly brittle in the process.

Further, being on a visit to my friend, Mr. Wilkie, gardener at Oak Lodge, Kensington, only a few months ago, I saw

canker on some of the shoots in the Peach house, and I remarked to Mr. Wilkie that I thought it was owing to galvanised wire being used, which, although it had been painted, was worn in places.

I should like to know if I am wrong in my impression, as I have never since used galvanised-iron wire as a trellis.—J. DOUGLAS.

THE MISTLETOE IN FRANCE, TURKEY, AND AMERICA.

ALLOW me to add a few particulars to those given by your correspondents respecting the growth of the Mistletoe in France. I can speak from experience, for I have travelled through the country in almost every direction where there is anything of interest.

The Mistletoe is abundant throughout the east, west, north, and centre of France, and more especially so in the districts where fruit trees are grown (chiefly Apple and Pear trees), and in the valleys of rivers. Nowhere is it so plentiful as in the valley of the Loire and those of its tributaries. At Indre, Nièvre, Sarthe, Loiret, and some other parts, it occurs almost exclusively on Poplars in moist places; and the Black Italian Poplar (*Populus virginiana*), and the Carolina Poplar (*P. angulata*), are more favourable than any other to its growth. This circumstance is easily explained. The seeds of the Mistletoe are contained in a white berry, of which the viscous matter adheres to them even after having been digested by the thrushes, which are very fond of the berries. The birds in winter often leave the woods for the borders of the rivers and streams, to seek for insects, which are more numerous in the sheltered valleys than in the open fields and the woods. At nightfall the birds perch on the tops of the tallest trees (Poplars), and the droppings which fall on the branches frequently contain Mistletoe seeds, which stick to the bark. In the following spring the parasite germinates, and grows rapidly at the expense of the abundant sap of the Poplar. In orchards it is likewise the thrushes that deposit the largest number of Mistletoe seeds on the Apple and other fruit trees; but this is chiefly done when the fruit is ripening, that being the time when the birds take up their quarters in such places. Other birds assist the thrush in disseminating the seeds, but thrushes are the principal agents.

I may add that everywhere in France this parasite is sought for and destroyed, as it is very injurious to the trees on which it grows, by feeding on the sap.

It has been observed that the Mistletoe is much more abundant on trees with spreading branches than on those of fastigate or pyramidal habit, such as the Lombardy Poplar. It is also found on Lime trees, the Ash, Willows, and softwooded trees, but very seldom on hardwooded trees, such as Elms, Beeches, and Hornbeams; and still more rarely on leguminous trees, such as *Cytisus*, *Robinia*, and *Sophora*.

Botanically the Mistletoe is not affected by the different trees on which it grows; that question has long since been studied. That the Mistletoe does grow on the Oak cannot be disputed; but its existence on that tree is exceedingly rare, not more than two or three instances being known in France.

The *Salvia* of which the name was lately asked is *Salvia horminum*, which is common on the Pic du Midi and Col de Tende.—EDOUARD ANDLÉ, *Puyg*.

ONE inquiry I would like to make of your St. Malo correspondent, and that is, Is the Mistletoe found on the Oak in any quantity in the part of France she writes from? In England, as mentioned in my former note, it is very seldom found on that tree, although at an earlier period of our history it may have been more plentiful. It would be interesting to know if it exists in western France on the Oak in any quantity, and if so, possibly cultivation may have had some part in driving it away.

Your correspondent's picture of its abundance in Brittany is at variance with the idea of good fruit being plentifully produced there, as the healthiest and most vigorous trees are not likely to support this parasite; at least, it is not so in England, where the best cultivated districts produce least Mistletoe—in fact, I may say that it is but rarely met with on Apple trees under twenty years old, and many healthy trees of double that age are free from it. It has, however, its favourite localities, and in such places attacks trees of a younger growth than it does elsewhere. The question would naturally arise,

Does the lack of vigour in the stock, as we may properly call the Apple, favour the growth of this singular production, or is it due to some climatic influence, as healthy free-growing fruit trees and abundance of Mistletoe are not often met with close together? The scarcity of Mistletoe in some districts is also due, in some measure, to the care taken to remove it, as many fruit-growers have it destroyed, as far as possible, in winter; and the purveyors for the London public, by legal or clandestine means, for both are adopted, contribute much to the same result before Christmas. This destruction of Mistletoe, improved cultivation, and other causes, tend to render it less plentiful than it was in the past, and, perhaps, when western France shall be as carefully and industriously cultivated as the home counties in England, the Mistletoe may, like many other things once plentiful, disappear by degrees, especially when the old fruit trees are replaced by young ones, and encouraged by manure and good cultivation to retain their vigour to a later period than their predecessors.—J. ROBSON.

PERMIT me to inform Mr. Robson, through your paper, that the Mistletoe grows most luxuriantly in the orchards round Sautari, many of which are within a mile of the sea. I have seen pieces brought into the hospital there in the winter of 1851, which were as much as two men could carry.—JOHN E. BARNES, *Clare, Suffolk.*

MR. ROBSON states in his letter that he believes that the Mistletoe is more plentiful in England than in any other country. I would most respectfully state that I have found the Mistletoe more abundantly in some parts of America than in any part of England in which I have been, although I have seen it growing very fine in some districts in England, but not equal to what I have found in the States.

In the spring of 1862 I was travelling from St. Louis, Missouri, to Vicksburg, Mississippi, down the Father of Waters, as the Mississippi is called over there; and after leaving St. Louis some distance I noticed what appeared to me to be a continual rockery, but could not see any rocks; so at one of the numerous wood yards where the steamer stopped for fuel I with several others went on shore, and to my surprise and delight I found the supposed rocks' nests were masses of our dear old friend Mistletoe. Many a noble bough was there, which, had it been in merry England, would have been greatly prized, but it is thought little or nothing of by our fast and go-ahead cousins.

I find the Plane tree (*Platanus occidentalis*), its greatest favourite, although it grows abundantly on the Red-flowering Maple (*Acer rubrum*), and *Carya alba*, the Hickory; but I have never found it on the Oak. It is found for several hundred miles down the Mississippi river, and in some parts of Arkansas, on White River, and St. Francis; also near the seacoast in North Carolina, especially near Wilmington on the Cape and North-East rivers, both of which are noted for swamps, and in these the Mistletoe seems to delight.

I am of opinion that the sea breeze and saline atmosphere are not detrimental to the growth of the Mistletoe, as I have seen it growing near the seashore a little above Fort Fisher, N.C., quite as luxuriantly as on the Mississippi, a thousand miles from sea.—ALPHA.

[We think the species thus noticed in America was *Viscum flavescens*, or Yellowish Mistletoe.—EDS.]

TO SET THE MUSCAT OF ALEXANDRIA LIKE THE BLACK HAMBURGH.

KEEP the day temperature at 75° by fire heat, and 85° with sun heat. Keep the night temperature at 70°. Damp the paths at 7.30 A.M. and at 4 P.M. Keep the whole of the atmosphere of the house in perpetual motion, night and day. When the blossoms are fully expanded give each bunch a slight shake once a-day. This is all that is necessary to insure well-formed bunches.—R. BUDD, *Gardens, Cobham Hall.*

PROPAGATING DRACENAS.

I was much pleased with Mr. Newlyn's notice on the genus *Dracena*, but he appears not to be aware with what great facility the genus may be propagated.

Any plant that has become too leggy may be cut down to

the pot, the stem cut into 1 or 2-inch lengths, and planted the same as Vine eyes. If placed in a good bottom heat they will make nice little plants in one season either for the decoration of the stove or flower garden. In the latter situation a few of the species do tolerably well, and are highly ornamental.—W. ROBINS, *Oakley Park, Suffolk.*

REPORT ON THE PRESENT STATE OF HORTICULTURE IN THE ISLAND OF JERSEY.

THE Royal Jersey Agricultural and Horticultural Society appointed a Committee to visit during last August various parts of the island, and to report on the state of its horticulture. That report is now before us, and is highly interesting and satisfactory.

The Committee visited many gardens—Beaulieu, the residence of F. Bertram, Esq.; Clifton House, Misses Ainge's; Government House, Major-General Burke Cuppage's; Spring Grove, Capt. Howell's; The Vineries, J. Pond, Esq.'s, where four tons of Chaumontel Pears were grown last year; Belle Vue, Col. Le Couteur's; Oak Walk, the Rev. P. A. Le Feuvre's; Trinity Manor, C. P. Le Cornu, Esq.'s; Rozel Manor, the Rev. W. Lemprière's, and La Chaire, Mrs. Fothergill's. We cannot spare space for a detailed notice of more than one of these well-cultivated gardens, and it shall be the last named.

"La Chaire, the property of Mrs. Fothergill, formerly belonging to her father, the late Samuel Curtis, Esq., F.L.S., Editor of the "Botanical Magazine," and a well-known botanist and horticulturist, is perhaps the most extraordinary triumph of horticultural skill in the world. Mr. Curtis took pleasure in telling, with a well-remembered smile, the small outlay originally required to purchase this now valuable property, and how his neighbors and friends congratulated him with irony on his acquisition. But the eye of genius saw the capabilities of this apparently useless and barren hillside. This unique garden has been visited by some of the most eminent men of the day, amongst others by the late Sir W. Hooker, Curator of the Royal Kew Gardens, by Mr. Babington, F.L.S.,* and by Mr. Bentley, F.L.S., F.R.H.S., and Professor of botany at King's College, &c., all authors of standard works on botany, and is with unusual liberality always open to visitors, thousands of whom, during the season, avail themselves of Mrs. Fothergill's kindness; and your Committee learn with pleasure that it is very rarely that any damage is done by them.

"The trees and shrubs which now cover the whole surface of this once unpromising spot, are, from their rarity and luxuriance, the admiration of all visitors. Many shrubs, which in England require protection, grow here without it; and are now so large, that it would be impossible to house them. Many of the rarities were sent to Mr. Curtis, by Sir W. Hooker, in exchange for specimens from here. Of *Acacias*, fifteen varieties are grown, some of them large trees, which in early spring are masses of bloom, and perfume the whole air of the valley; of *Magnolias*, four varieties; of *Rhododendrons*, over twenty varieties, including most of the much-prized Himalayan varieties and many hybrids; of *Eucalyptus*, or Australian Gum Tree, four varieties; of *Hydrangea*, four; besides, thirty-six other species of foreign trees and shrubs, prominent among which are the well-known *Wellingtonia gigantea* and the Cedar of Lebanon.

"The gardener, Mr. Beckford, who, single-handed, keeps this romantic spot in perfect order, deserves the highest praise for its cleanliness, and for the vigorous health and symmetry of all under his care.

"Your Committee were glad to see that all the shrubs and trees were carefully labelled in bold characters,—except when the names of the plants were unknown, even to the eminent botanists before mentioned, thereby proving their great rarity,—thus enabling visitors to become acquainted with the different subjects cultivated, without trespassing on the time of the gardener. One specimen *Dacrydium cupressinum*, New Zealand Cypress, your Committee greatly admired. Nor are herbaceous plants neglected; *Mesembryanthemums* are here grown in large numbers, and stand the winter without protection.

"Mr. Beckford drew the attention of the Committee to a seedling Zonal Pelargonium, called 'La Chaire,' raised by him, which gives promise of being a valuable acquisition.

We will conclude with an extract from the Committee's summary:—

"Not only were the places visited remarkably well and carefully kept, showing evidence, too, of habitual good management; but throughout the island there were signs of taste and care observable, altogether wanting a few years back, which elicited the admiration of the strangers who joined the Committee.

"Where formerly, in front of many a farmhouse or cottage, was to be seen a patch of grass, rough with molehills and full of weeds, the pasture of a tethered cow or goat, was now found a well-mown lawn, ornamented with flower beds and shrubs. This betokens an improved

* Mr. Babington is the Author of a Channel Island Flora, entitled "Primitive Flora Sarum."

taste, an increasing love of horticulture, an appreciation of the beautiful, and a pleasure sought in refined and domestic ornamentation far less observable on the last occasion of a visit made by your Committee.

What has greatly contributed to this progress has been the introduction of variegated plants and shrubs, and of the bedding system of flower-garden arrangement. Not only was the progress evident in the ornamental part of the gardens, but the vegetable portions were cleaner, and showed unmistakable tokens of good management. The places open to inspection were undoubtedly the property of the older and leading horticulturists; yet it was evident to your Committee that their example was influencing the community for good, and there was no lack of imitation, not to say rivalry, in garden cultivation.

Your Committee must not fail to notice one garden, which for the judicious and beautiful combination of colours deserves great praise. It was not on their list for inspection, but the taste displayed in the arrangement of the lawn and the surrounding flower borders, induced your Committee to stop and notice it. Mr. F. Candia, the proprietor, had admirably disposed his Zonal Pelargoniums, Verbenas, and Calceolarias, whilst a simple line of white Pelargoniums, backed by a row of Golden Euonymus, running along a low wall, proved most effective.

Next, it is encouraging to notice how great are the returns of intelligent and systematic labour. Your Committee's attention was especially directed to this point. In many cases the results seemed extraordinary, when compared with the amount of wages expended in labour. Such are the effects of well-organised and systematic arrangement that comparatively large gardens can be and are kept in good order by the proprietor with the occasional aid of a farm servant, producing surprising effects and most satisfactory results, when in the care of a painstaking horticulturist.

In an island in which limited incomes are the rule, it was gratifying to find how much was done at a small outlay, and to this your Committee wish particularly to call attention, as a means of encouraging, as a recreation, a more general devotion to horticultural pursuits and tastes.

One pleasing feature noticed by your Committee was the long connection, in many cases, between proprietors and their gardeners, cases of thirty years, twenty-one years, fifteen years, and eight years service; nor was there any observable relaxation on the part of the gardeners in the endeavour to do their duty to their employers; on the contrary—it seemed to have created as great an interest in the well-doing of the place under their charge as could possibly be felt by the proprietor.

It particularly struck your Committee, and it is a well-known fact among the members of the Society, that wherever the gardener is "encouraged" to exhibit, a spirit of wholesome rivalry is engendered, the effects of which, as a rule, are manifest throughout the whole of his work. Your Committee failed to notice that there was a lack of attention in any one department, or that one object was attained to the detriment of another.

The effects produced by the judicious combination and contrast of colour, whether in the leaf or flower, was most noteworthy, the two most striking instances of this were the one at the Misses Ange's, the other at Trinity Manor.

The wall fruit with the exception of that at the Misses Ange's and Colonel Le Conteur's, was very much below the average. Indeed, it may be said, with few exceptions, that it is a failure this season; on the other hand, the Pear and Apple crop promises to be a plentiful one.

The Committee noticed with much regret, that the mildew on the Grapes showed signs of having been very prevalent, owing, in most instances to the presence of plants in the greenhouse. Still, your Committee think this is not a necessary adjunct to the growth of plants in the vinery, and that it may be avoided by adopting judicious treatment, and suggest the timely application of artificial heat, as soon as there appear indications of the disease, admitting air freely on all favorable occasions. It is stated by a gentleman of much experience in the cultivation of this fruit, that if the plants are turned out for a few days whilst the froit is stoning, and heat supplied as above directed, that the disease may be entirely prevented, without the necessity of having recourse to sulphur, which, as frequently applied, does much injury to the Vines, by choking up the pores of the leaves. It is perhaps needless to remind growers that drought, insufficient nourishment at the root, and over-cropping, are predisposing causes of this disease.

In the Vegetable department there was much to admire, both as regards the varieties cultivated and the high state of perfection to which they were grown. Here the progress was very marked, and it is evident that the periodical Shows held by the Society, have most notably, but surely, attained the object the Society had in view—viz.: the encouragement of the cultivation of such newly introduced varieties as were marked improvements upon the older ones; some of the indirect results being the abundant and beautiful daily supply to be seen in our local markets, and the yearly increasing exports to the English markets. The rotation of crops was, in most instances, rigidly attended to.

This leads to the consideration of a topic which cannot be overlooked by your Committee—viz., the growth and return during the past season of the early Potato crop. In one instance which has come under their notice, the yield has been six tons per acre, and has sold

for £25 per ton, giving a total return of £150 per acre. Besides the availability of the land for a second crop. On making inquiries, your Committee learnt that the total quantity exported during the past season has amounted to 3920 tons, which at £8, would give a return of £31,360 from this branch of island produce alone. This crop, though not heavy, is quite an average one, and with the high price realised, may be said to have given good returns for outlay. But it is feared the store varieties will prove much diseased and yield a poor crop."

TIME FOR STARTING VINES.

A HAS a vinery planted with Vines, from pots, in May last, in a border in the centre of the house, one Vine up the rafter, and the other down. The Vines are chiefly Muscats. They grew very well, but, of course, ripened off quite late (November). Well, A is advised by B to start these Vines early this season by the assistance of artificial heat. C recommends quite the opposite, he says that the Vines ought to start "of their own sweet will." Between the two opinions A is bothered, and would be obliged to the Editors if they would decide for him.—X.

[We agree thoroughly with C, and as the Vines ripened their wood late, we would let them start almost naturally, and then encourage growth and early ripening, so as to start earlier in 1869.]

CUPRESSUS MACROCARPA AND OTHER CONIFERS.

As Mr. Robson has asked for accounts of *Cupressus macrocarpa*, I am tempted to tell you what my experience has been here. Two plants in strong, but well drained clay, near a brook, were killed root and branch in the spring of 1867. Three on higher ground, in loam, Kentish rag lying beneath, were untouched. In this case I think we may attribute the cause of death to the clay, and the damp rising from the water. *Cupressus Udeana* in this same low ground is unhurt.

Some years ago I planted two trees of *Taxodium semper-virens*, one in fairly dry ground, the second in soil so wet that the hole had to be kept open by spades till the tree was planted. The second grew feet, while the first grew inches, and the case is still the same, only in a minor degree. I give you underneath the dimensions of my best Wellingtonia. Height, 27 feet 2 inches; girth of stem at about 1 inch from the ground, 6 feet 10 inches; circumference of branches, 43 feet 6 inches.—J. RIDGWAY, Fairlawn, Tonbridge.

SHREWSBURY'S NONPAREIL GAS-HEATING APPARATUS.

WHEREVER gas can be obtained as the source of heat, this is the simplest and most efficient mode of heating that we have yet seen. For entrance halls, conservatories, greenhouses, offices, harness rooms, and elsewhere it is most applicable, for when not required for heating purposes it may be removed until the cold season returns. Several of these apparatuses would heat a large conservatory or a church, and would be more desirable than more expensive methods of heating.

The apparatus is a boiler with a flow pipe into a pedestal tank, and a return pipe from this to the boiler; the whole less than 5 feet long, 2 feet high, and 8 inches wide. They can be had, however, of larger dimensions.

The gas furnace and the actual boiler are enclosed in a stout sheet iron case, and the gas flames are so disposed that their heat is profitably expended in raising the temperature of the water, and cannot act directly on the outer case or on the pipe through which the products of combustion are conveyed; consequently the external parts of the contrivance never get too hot.

The boiler itself is cylindrical, and has a tube or several tubes running through it. These tubes are bottle-shaped, wide below and contracted above. The boiler and its tubes are of cast iron. The gas-burners are placed directly under the bottle-shaped tubes, so that the greater part of the heat must be expended in raising the temperature of the water surrounding these tubes. To prevent any serious loss of heat by the

* "A second instance has been reported to your Committee, in which fifty perches of land have returned £70. This last is almost incredible, but seems well authenticated. The variety cultivated was the Early Fluke (a fixed sport from the old Fluke)."

escape of the hot air through the contracted orifices of the tubes, a separate case containing non-conducting materials is fitted above the boiler. The amount of heat that cludes this ingenious trap is so small that the pipe provided for the escape of the products of combustion never becomes unpleasantly hot.

The burners are constructed on the principle of the Bunsen burner, and give perfectly smokeless and intensely hot flames. Unlike the ordinary air-burner, however, Mr. Shrewsbury's patent burner requires no attention, and always gives a pure blue flame, free from any unpleasant smell. The holes for admitting air at the bottom of the burner are so constructed that the gas cannot be ignited in the tube by holding a light close to these holes. The burners are screwed into a flat gas-tight iron box at equal distances from the supply pipe, so that there is the same pressure of gas in each burner. This gas box is an important part of Mr. Shrewsbury's invention, for when several burners are fixed in a coil of tube in the ordinary way they necessarily give flames of different magnitudes. The box, with its burners, is made to turn on a swivel, and swing out of the door in the outer case for the convenience of lighting. Some of the larger boilers have six tubes, and as many burners, or groups of burners. The smallest size has only one tube. With such an apparatus an equable temperature can be kept up in a conservatory or room at the cost of about 3d. a-day for gas.

We have one in our outer office, where it may be seen in operation.

HEATING APPARATUS.

A CHEAP and efficient mode of heating is so useful to gardeners, that I was much pleased with the description of the Arnott's stove (in page 27), more especially as its powers have been brought to the test of experience.

Some years ago I heated an orchard house with a brick Arnott's stove, and, as regards economy of fuel, no contrivance could have been more frugal. Had the house been employed as a vinery, with the plants trained under the glass, it would, probably, have remained to the present day; but as it was devoted to Peach and Fig trees in pots, it was found that the stove took up too much space, and I was desirous of a mode of warming which would afford bottom heat. Mr. C. W. Martin, M.P., had then published the account of his revival of the Roman hypocaust, and it appeared to me that an arched flue under the border would be better still. A flue was thus constructed in my house, and the border made level with cinders. A long account of this flue, with diagrams, was published in the *Gardeners' Chronicle* of the 20th of May, 1865, to which, as also to the preliminary article of the 13th of the same month, I beg to refer such of your readers as may be desirous of learning further particulars.

The subsequent experience of three years has not modified the favourable opinion I had then formed; but if I were about to build another flue I would make it a few inches deeper, in order that the sweep might have more room to turn himself about; and if the small escape of heat, which, undoubtedly, takes place through the outer wall, be thought important, this could be remedied by making the arch of the flue spring from an internal wall built for the purpose, instead of making it spring, as at present, from the external wall; and if a few inches were left between the two walls, all escape of heat would be prevented, and the direct flue might run under the front border, and the return under the back one.—G. S.

THE ROYAL ASCOT GRAPE.

WE have on several previous occasions drawn the notice of our readers to this new Grape, and have spoken of it in the highest terms as being one perfectly distinct from every other early Grape, and possessing a richness of flavour which is not found in any early variety except itself. Our present object in noticing the Royal Ascot, is to introduce a new character it possesses, and as this is one which adds greatly to its value, it is desirable it should have the greatest publicity. As we have witnessed the facts we are about to relate, we speak with the most perfect confidence. This new character it has shown is its great prolificacy, and its pertinacity in keeping up a succession of fruit without going to rest. There is in Italy an insignificant little Grape grown under the name of "Uva di tri volte," the bunch and berries of which are not bigger than the Black Cluster, and which possesses this same property, so that by stopping the shoot two or three joints beyond the last bunch, just as the flower has fallen and the berries are set, it

may be made to produce three crops in the year. The Royal Ascot, unlike the little Italian variety, has bunches and berries as large and handsome as those of the Black Hamburgh, and the vigour of the Vine is unusually great.

The Vines that produced the new Grapes shown at the last meeting of the Fruit Committee, were not more than a foot high, and turned out of 5-inch pots in the first week of May last, being planted out in a Pine stove 18 feet wide, with a span-roof, and a 3-foot path up the centre. Mr. Standish states, "It was at the front of this house, on each side, that I put a little soil kept up by a dry 4½-inch wall of bricks. At the back of this were Pine plants plunged in dung and leaves. The Vines grew very rapidly, and soon got to the top of the house, about 12 feet. They were then topped, and about the middle of August they threw out bunches all down the Vines. At first we plucked these off, but they came thicker and faster from the young growing wood. At last, about the middle of September, I left from four to six bunches on six plants, and although they were grown under such adverse circumstances, I send you a bunch to form your own opinion, and judge what the Vine is capable of doing under better culture. Just as the Vines set their fruit I found that their roots were out in the plunging material, where the Pines were growing. I thought as they must be moved, the sooner this was done the better, so they were taken up and laid into another lot of soil, but there was such a quantity of roots that the leaves on the young Vines flagged. So you see they had a rough time of it."

As a Vine for winter work it is unequalled.

HENDERSON'S CONQUEROR CELERY.

I BELIEVE this distinct variety of Celery was first issued to the public by the Messrs. A. Henderson, and after two years' experience with it, I am of opinion that it is the best white variety in cultivation. I have not formed this opinion hastily, for, having to grow Celery largely, I have tried all the white varieties I could procure, and I do not hesitate to recommend this sort to all those who require Celery of a superior description, and particularly for early sowing to come in for late summer and early autumn use.

I have proved that when sown in heat in January, and grown on without receiving a check, not 1 per cent. will run to seed.

It is distinct from other white varieties in being more branching in habit, and having a rich green and rather curly foliage. It is also a rapid and robust grower, with solid, yet very tender, leaf stalks, so brittle that the stalk can scarcely bear the weight of its leaves; it blanches so well that every stalk is fit for use, and of a pearly white colour. It has a nice walnut flavour, and is remarkably crisp.—THOMAS RECORD, *Lillesden, Hawkhurst.*

CATERPILLARS ON BEDDING AND OTHER PLANTS.

I FORWARD for your inspection a caterpillar which I have found by hundreds on my young stock of Pelargoniums, Verbenas, Calceolarias (shrubby and herbaceous), Cinerarias, and Primulas. A short time ago I was induced to look very closely into my boxes of bedding plants, the foliage becoming nearly perforated all over. I at once set to work to hunt for slugs, which I thought to find, but to my astonishment it was a large green caterpillar, which I discovered in myriads. I am glad to say I caught them in their early state of working, otherwise I do not know what the consequences would have been.—R. E., *Womersley Park, Yorkshire.*

[The caterpillars were crushed by the post office punches. The portions uncrushed were like the larva of the Brimstone Butterfly. The eggs must have been deposited late last year; and hatched early by the warmth of the house.]

PEAT CHARCOAL.

As a constant reader of your Journal, I see and have before replied to inquiries on peat charcoal. "T. C." wishes it for Hays's patent stove. It was manufactured near Carlisle (twelve miles from it), for some years, but from mismanagement did not succeed as a manure. The Company (now guaranteed), have discontinued to make it. The mode of calcining it is troublesome and expensive. The peat has to be placed in an iron vessel enclosed in a brick arch, with a flue throwing a blaze around it. There is a receptacle at the bottom, with a pipe

for discharging, to separate the grease from the peat before it will calcine. The cover of the iron vessel must have a double rim, to be filled at top with water to keep it air-tight. The most likely place now to procure peat charcoal will be in Dublin. Write to Mr. J. Smithson, Messrs. Goulding's Manure Manufactory, Dublin. If particulars are required for manufacturing, I shall be happy to afford them in detail.—H. ORMAN, *Griusdale Manure Works, Carlisle*.

LEEDS PROFESSIONAL GARDENERS' FRIENDLY BENEFIT SOCIETY.

SOME time ago the advisability of establishing a gardeners' friendly benefit society met with several advocates in the columns of the Journal. It also received the support of the Editors, who kindly took the trouble to publish a code of rules for the guidance of such societies; notwithstanding which, the project fell through. The want of such a society has long been felt in this neighbourhood, and to meet it several of the leading gardeners around here met and adopted the necessary measures towards establishing one, and drew up for its guidance the rules I herewith beg to forward you.

I scarcely expect that the rules will have your entire approval, for, in the first place, they do not conform to a graduated scale of contribution, as insisted on in your code. That important matter, I believe, received due consideration at the formation of the society; but the conclusion came to was, that as the society was to consist entirely of professional gardeners, and the majority of the older members being head gardeners whose wages are very rarely stopped during temporary sickness, they would not, therefore, relatively be so likely to apply to the society for assistance as the younger members, the majority of whom are under gardeners who have not generally the same consideration shown them by their employers. The society is now having some proof of the soundness of the above reasoning. There are at the present time three or four members sick who might lay a just claim for assistance; but only one who is an under gardener has the necessity to do so, and his is a case of extreme prostration. Whilst, therefore, admitting the equity of a graduated scale in almost all other benefit societies, ours has some cause to show why it should be an exception.

Some of the above reasons also apply as regards our rates of contribution being fixed lower than with most other societies. An additional one is, that we shall have a much larger proportion of honorary members. We already have nearly 10 per cent. of such without having made any solicitation; but when, as we intend doing soon, we bring the objects of the society before the notice of our employers and others, and solicit their support, we have every confidence of meeting with a very liberal response from them.

It has been thought advisable to alter Rule 24, so as to admit younger members. Originally members were not admitted under twenty-one years of age, and they were required to sign a declaration that they had worked five years successively as a gardener; whereas now members are admitted at eighteen years of age, providing they can affirm that they have worked three years in the capacity of a gardener.

I also wish to call attention to the rule which gives members the privilege of bringing any extraordinary flowers, fruits, or vegetables before the President, who submits them to the notice of the meeting, and invites any remarks or discussion thereon. We have found it greatly to enhance the pleasure and instruction to be derived from attending the meetings of the society.

It is also proposed to invite members to contribute short papers or essays on subjects connected with our profession, and to read them at our meetings after the usual business belonging to the society has been transacted. By so doing it is hoped that some inducement will be afforded young men to join, partly for the instruction to be gained therefrom. To all of us it will make the meetings more interesting, and tend to make the society a worthy one, around which all may rally, and from which shall emanate both help to the aged and afflicted, and pleasure and instruction to the young and strong.

The society has now been established a little over twelve months, and the first annual dinner was held on the 15th inst. at the Leopard Inn, Briggate. A very large number of the members were present. Mr. M. Daynes presided, and the vice-chair was occupied by myself. "Success to the Society" was proposed; and the Secretary, Mr. W. Sunley, in responding, stated that the Association was formed in 1867, and that the rules

were passed and registered under the Friendly Society's Act in March of that year. Each member paid 3d. per week, and in sickness received 10s. per week for half a year, and 5s. for the remainder of his illness. At the death of a member £10 were paid over to his widow or relatives, and on the decease of the wife of a member £7 were paid over. A levy of 1s. each is made at the death of a member, and of 6d. each at the death of a member's wife, towards the funeral allowance. When the society commenced there were 76 members, and at present the number was 103, exclusive of six of the honorary class. The funds had a balance of £51 9s. 4d. now at the credit of the society.—R. FEATHERSTONE.

BROCCOLIS MALFORMED AND NOT TRUE.

SOMETHING appeared a short time ago in the Journal about the malformation of Winter Broccoli, I am sorry to have to complain of the same evil. Instead of having heads in the form of Cauliflowers, a great many of mine have degenerated into a kind of branching Broccoli, not equal to Lee's White Sprouting. Now, this is very provoking after being at the expense of seed, labour, and land, to say nothing of the disappointment, and it is not the case only with Snow's Winter White and Backhouse's Winter Protecting, but with other kinds as well.

I am beginning to think that the Broccoli tribe is fast degenerating. Often from an ounce of seed I can scarcely see half a dozen plants alike. I think these diversities ought not to be. When I order a certain kind of Broccoli, I am inclined to think that I ought to have something like what I order, and what its name implies. There must be a fault somewhere, but where it lies is not for me to say; whether it is with the grower, the importer, or the seedsman, I am not prepared to decide. The seedsman must sell such as he buys, the grower must sell such as he grows, and the importer such as he imports.

When I was a youth we could procure Miller's Dwarf Broccoli and Dwarf Russian Broccoli something like themselves—little compact subjects about 1 foot in height when grown on a north border, and ready for cutting in April and May, but now they, though called by the same name, reach much nearer the sun. Perhaps they are called the "Improved!"

I am afraid that I must say to the original of the above "farewell." For sixteen years I have tried, but tried in vain, to procure Miller's Dwarf as it was twenty-five years ago. I have a kind sent bearing the name, but that is all; what should have been Miller's Dwarf, has merged into some giant form, and I am as usual doomed to disappointment. It is time that some one came to the rescue.—M. R., *Acklam Hall, Middlesbrough-on-Tees*.

NOTES AND GLEANINGS.

THE PROPRIETORS OF THE JOURNAL OF HORTICULTURE have determined on offering at the ROYAL HORTICULTURAL SOCIETY'S SHOW, at LEICESTER, to be held on July 16th and following days, Special Prizes of the same value and for the same subjects as they did last year at the Bury St. Edmund's Show—viz., Two First Prizes of the value of Ten Guineas each for the two best Desserts, consisting of not less than Seven kinds of Fruits of 1868, arranged as for the table, combining Quality of Fruit with Taste of Arrangement. These prizes are to be competed for by Gentlemen's Gardeners and Amateurs only, and but one prize to be taken by the same person.

CORDON TRAINING.

(Continued from page 73.)

Fig. 5 is from a photograph of an upright trained tree, with five vertical cordons springing from a common base. Trees may be purchased already trained in this form, but the double horizontal cordon may at pleasure be changed into this form by selecting strong shoots at regular intervals, fastening them to stout stakes, and summer-pinching them as practised for oblique cordons. No central stem should be permitted in an upright trained cordon; it will absorb an unfair proportion of the strength of the tree.

Fig. 6 is a fan cordon, and the advantage of the simple method of summer-pinching will at once be seen. Instead of a wall being perforated all over with nails, a few only are

required to fasten the shoots selected for cordons. This form may consist of five, seven, or more cordons. The symmetry of the tree should be the point most strictly attended to, a sym-

metrical tree being more pleasing to the eye than one irregularly shaped. The same method of pruning is required as for oblique cordons.

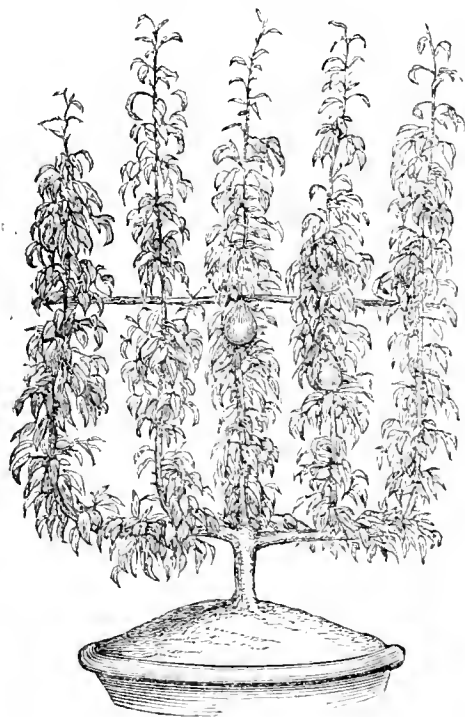


Fig. 5.



Fig. 7.

Fan cordons can be managed by an unscientific gardener, but to produce one well shaped on the usual plan requires a skilful and practised hand. It is possible that in the northern and westerly districts Peach and Nectarine trees will produce

too many unripened spurs, but probably by attention and strict thinning this difficulty will be surmounted. Plums, Pears, Apples, Apricots, and Cherries are all amenable, and no hesitation need be felt in subjecting them to summer-pinch.

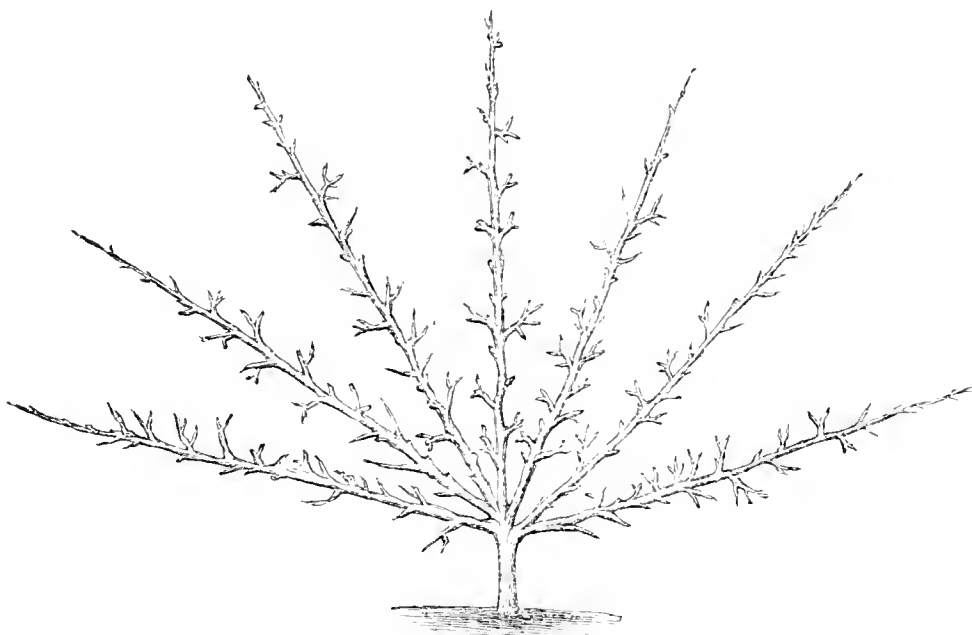


Fig. 6.

Fig. 7 is a double oblique cordon, formed by cutting down the dwarf tree to two buds, and proceeding as for oblique cordons.

Fig. 8 represents a compound horizontal cordon. This

should have a central shoot and branches trained from it as nearly opposite as possible. This system has long been used for Pears and Apples, but not so generally for stone fruits.

It is well adapted for Peaches, Nectarines, Apricots, Cherries, and Plums. All of these may be trained as compound horizontal cordons in the colder climate of Yorkshire.

A very skilful cultivator of fruit has trained Peaches and Nectarines with complete success, to counteract the tendency of these fruit trees to produce much unripened wood. When under cordon training he leaves on every branch a shoot which he calls an exhauster. This shoot forms an outlet for the superfluous energy of the tree; and the fruit spurs, being deprived of the superabundance of the vital fluid, do not break into growth. This theory will be found to be very sound practice, and should be used wherever there is a tendency on the part of the tree to produce many unripened spurs. This mode of training for

the Pear and Apple is already well known; and when applied to Peach and Nectarine trees, the only deviation from established practice will be to treat every horizontal branch as a cordon, and to practise summer-pinching instead of allowing gross upright shoots to be made.

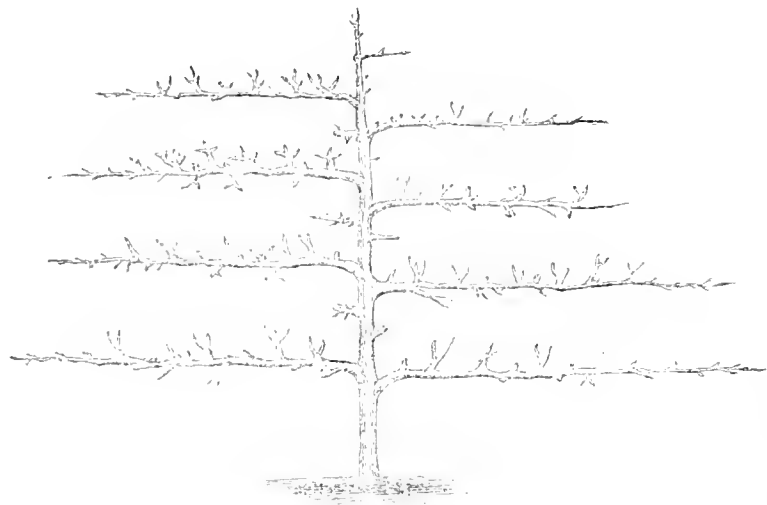


Fig. 8.



Fig. 9.

Fig. 9 is a single vertical cordon in a pot, and if an orchard house or glass shed is available these will be found very useful and interesting trees. Pear, Apple, Cherry, and Plum trees may be potted into 8 or 10-inch pots, and moved into a glass shed, or, indeed, any shed open to the sun, while in bloom, and kept under cover until all danger from spring frost is past. They should then be removed to a border prepared for them—the warmer and more sheltered the better. The pots must be plunged to within 2 or 3 inches of the rim. Stable litter partly decomposed should then be spread over the pots and the soil; and as these trees will require watering, they should be placed near water. One-year-old dwarf trees may be bought at a cheap rate and potted. The fruit will be produced in the second year after potting. The soil for the trees should consist of good, strong, calcareous loam mixed with a third of its bulk of decomposed manure. An old Cucumber or Melon bed may be used; or, if not convenient, stable manure thrown up and fermented for some time will answer very well. The soil must in all cases be made very firm and solid in the pot. The border or bed for their summer quarters should be 6 feet wide;

this will take four rows of trees. This distance is perhaps the most convenient for pruning and watering, but it may be increased or diminished at the will of the cultivator.

Under this system trees which appear to be walking sticks in the winter will become wonderfully fertile; and if protection in spring can be afforded the crop is almost certain. As it is possible and probable that during the summer some of the roots will have passed through the bottom of the pots into the soil beneath, it will be necessary, after the fruit is gathered and the trees are at rest, to detach them from their anchorage by taking up the pots and cutting off all the roots that protrude through the drainage hole of the pot. As this operation will break up the summer quarters of the trees, there will be no necessity to replace them at the distance requisite for their summer cultivation. They may be much more closely packed for their winter quarters, plunging them as mentioned before, and during winter covering the pots thickly with straw or stable litter. In this position they may be left without any further care or attention until the returning spring urges them again into fresh activity and fruitfulness.—T. FRANCIS RIVERS.

WORK FOR THE WEEK.

KITCHEN GARDEN.

The general preparation of the ground for the spring crops having been delayed later than usual, no time should be lost in forwarding the necessary digging and trenching, preparatory to a more thorough manipulation of the soil before sowing. The principal causes of success in growing vegetables are a fine tilth, and as great a depth of earth as can be obtained without interfering with the subsoil, if the latter is of a sour nature. Clayey and retentive subsoils should, however, be forked over, loosening the ground for some depth. This will facilitate the passage of water from the roots, and by degrees the subsoil will become improved. There are but few vegetables that do not require a medium depth of 2 feet to grow in, some more, and hence the necessity of deep, well-pulverised soil for their successful cultivation. For the present the dung may be dug in as trenching

goes on, and its thorough incorporation with the soil will be best effected when the ground is again worked over with a three-pronged fork. It is now necessary to determine what the different quarters of the garden shall be filled with during the season. Though one vegetable may be grown on the same ground for years, yet such a method involves a greater expense for manure and labour than when a regular system of rotation is adopted, as the culture of one vegetable often prepares the soil for the growth of another. The chief rule to be observed with all annual vegetables, is never to have two crops of the same class directly following each other. Though excellent plans of rotation may be laid down, yet the period that will elapse before the ground is again occupied by a similar crop, will depend upon the wants of the establishment, and the extent of ground at the disposal of the gardener. *Garlic* should

be planted: also *Shallots*, in rich ground, in drills 1 inch deep, and 6 inches apart every way. To prevent the attacks of maggots it is recommended, when digging, to mix a good sprinkling of salt and soot, or wood ashes, with the soil; or, if any signs of maggots appear, water with soot dissolved in water, the soot to be put in the bottom of the tub, a little water to be added, and then stir the whole well, and fill up with water. The liquid will settle in a few hours, when the top should be skimmed off, and the rest will be fit for use. When hoeing draw the earth away from instead of towards the bulbs, to prevent the attacks of mildew. Slacked lime strewed along the rows will prevent the worms from drawing the bulbs out of their places. *Potatoes*, plant Ash-leaf Kidneys on a bank or border sloping to the south, or at the foot of a south wall or hedge. The middle-sized whole Potatoes should be planted 9 inches apart in the row, and covered with 4 inches of soil. When they appear above ground they should be protected with straw or litter every night until all danger of frost is over.

FRUIT GARDEN.

If any fruit trees still remain not pruned, it is not yet too late to perform that operation, taking care to keep the branches thin and regular. When Peach and Apricot trees are just ready to open their blossoms, you must be ready, too, with a wash composed of lime, soot, sulphur, and soft soap, to paint the trees all over. The later this is done the better. For the other trees, on the walls, or in the orchard, six weeks hence will be time enough to wash them; but for those on which you have noticed any red spider for the last season or two, you must mix a portion of sulphur with the soot and lime.

FLOWER GARDEN.

In gardens where the ground was thrown up roughly in the autumn, it will by this time be pretty well mellowed, and, therefore, if the weather is dry it would be well to dig the beds over again, so as to bring some more of the soil under the direct action of the atmosphere. When the ground is poor enrich it by adding some fresh compost, such as leaf soil, peat, and loam mixed together, but avoid fresh stimulating manures, or you will have strong, rampant plants at the expense of a fine show of flowers. A few days might be advantageously spent in regulating shrubs, such as tying misshapen plants into good forms, pegging down branches to cover the naked ground, and planting a few evergreen trailing plants where such are necessary. Examine landscape scenery, and see whether by taking down a tree here and there, or lopping a few branches, you cannot let in a distant object or two that may be worth seeing. As the time is rapidly drawing on for potting Carnations, look well to your compost heaps, turn them over, and particularly in frosts. Examine your turfy loam, break all lumps with the back of the spade, and destroy every wireworm you see. It is lad economy to be negligent in paying attention to your soil, as a single insect of this description will often destroy Carnations to a serious extent if overlooked. Should a frost ensue, gather cow manure from the pastures, and pile it in heaps to decompose. All vegetable refuse ought to be collected whenever an opportunity offers.

GREENHOUSE AND CONSERVATORY.

Established plants in the conservatory should about this time have the soil well stirred at the tops of the pots. The surface of the border should now be removed altogether, the soil stirred with a fork a few inches deep, and a layer of fresh earth put on; more air should be given for the first week after the operation to sweeten the house. Fast-growing climbers that exhaust the soil in a few years and become stunted, ought to be transplanted now into fresh soil. As large quantities of air are admitted to the greenhouse, more attention to watering is necessary. Many greenhouse plants would be much benefited if they could now be turned out into cold pits where frost could be kept from them. Our long nights are not favourable to very early spring growth; indeed, nothing can be more injurious to many woody plants than to allow or encourage them to grow early. Softwooded plants that are annually cut down or close-pruned, do not suffer so much from growing out of season.

STOVE.

Any plants that flower in winter are valuable. *Clerodendron splendens*, *Centradenia rosea*, and *Manettia bicolor*, are of this class. The *Manettia* requires less heat than the other two. They will do well in an intermediate house, and flower freely in a conservatory with 45° of heat. *Dendrobiums* which had their shoots well ripened last autumn, will soon be beginning to bloom; some of them might now be forced, and others removed

to a cold place and kept dry, in order to prolong their flowering season. *Maxillaria aromatica* ought to be grown largely for forcing, it is one of the easiest Orchids to cultivate. A few *Stanhopias* might also now be forced. All of these plants that have been kept dry through the winter, should be plunged in tepid water to soak the moss, peat, &c., in which they are grown, preparatory to regular watering. It is yet too soon to encourage plants in general to grow; many would be benefited by a layer of fresh soil or top-dressing. Give air freely on fine sunny days.

FORCING PIT.

There is considerable room for speculating on the causes which render plants liable to the attacks of insects. In the forcing pit we see hardy plants infested on which an insect is never seen in the open air. Moist heat being essential for this pit, less watering is needed. Over-watering is a frequent cause of failure in hardy plants, and a dry atmosphere and sudden changes are nearly as bad. *Pimulas*, *Auriculas*, *Anemones*, *Pionies*, and almost all plants that flower in April, May, and June, out of doors, will force and flower two months earlier if not put into too much heat at first. The whole race of papilionaceous plants will force with less risk than other tribes.

PITS AND FRAMES.

Scarlet and other *Pelargoniums* planted out in pits for the winter may be potted and placed in a little heat. The first opportunity make up a gentle dung bed for a propagating frame.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Asparagus.—Just now we like an *Asparagus* frame to have the woodwork at the back and ends white, and the glass clean, to let the shoots have all the light possible. There is no chance of the sun being so bright for a month or two, as to injure anything by the light and heat reflected from a white surface. We are obliged to deaden the white colour on many walls in summer, but it is scarcely possible to have walls where plants are growing too white in winter, as the rays of the sun are in general too oblique for their light and heat to be reflected powerfully. Hence clean glass is of more importance in winter than in summer, when a little shade is often an advantage. Our forced vegetables we have merely kept succeeding each other.

Rhubarb.—We are glad that "Yorkshire" has it so good close to his kitchen fire. It is many years since we told how a clergyman used to give treats to the ailing of his flock by resorting to similar means. Nothing suits better for the purpose than an old barrel of convenient size for removal, packing the Rhubarb roots in the bottom, in soil, giving a good watering out of doors, and covering with an old cloth if there is not a lid. Wherever a heat of 50° to 55° can be secured, Rhubarb can be had all the winter after Christmas. It does not come so well when taken up before December. If the roots become too dry the barrel may be rolled outside, watered, and when drained brought in again, without causing dirt. We would be afraid to mention the number of stalks taken out of a barrel 30 inches in height and 15 inches in diameter, and it should not be forgotten that Rhubarb thus forced will be better when from 12 to 15 inches in length than when of longer growth. There are few who have a garden and Rhubarb roots in it, but may thus have a tart in winter and spring if they like. If desired, the roots when done with may be divided and planted, and according to the treatment given they will be fit to be taken up to force again in two or three years.

Sea-kale may be grown in a similar way, and in boxes or barrels 18 inches deep. Nothing is easier to grow in summer; and young seedlings a year or two old, planted in rows 9 inches apart, and 18 inches from row to row, would be in a fine state for taking up after the beginning of November. We would prefer boxes for this purpose, adopting the same treatment as for Rhubarb, but keeping dark, and cutting the heads when from 6 to 7 inches long. We have filled a 12-inch pot with roots, leaving the crowns level with the rim, and covered with another pot of a similar size, closing up the hole, and tying a piece of list round where the two pots joined, and from that pot obtained two good dishes, or three middling ones, without counting on a second gathering of smaller shoots. Not to speak of many manufactories, there are often recesses near fire-places where such pots or boxes could be placed, and thus a great delicacy and luxury could be obtained at little trouble,

and hardly any expense. If only gathered from once, or partly twice, the roots will be useful for planting again; but if allowed to produce a forest of small shoots, the roots will be of no further use, but should be thrown away when done with. Sea-kale, like Rhubarb, is easily obtained over hotbeds in Mushroom houses—anywhere, in fact, where the heat, from 50 to 60°, would bring it on; but it is well to note that it can also be had in good condition wherever there is a garden to get the roots from, and a fireplace near which they may be placed. After the end of March we have seen fine pearly white Sea-kale in a dark cellar. With the dung necessary for a small Mushroom bed in such a cellar, we have started Sea-kale in pots before the dung was mild enough for spawning.

In the open ground, trenching, ridging, &c., was proceeded with in suitable weather, and a piece of ground was prepared for Peas and Celery, following after Parsnips, Carrots, &c., the ground being laid out in 5-foot and 4-foot widths; the 5-foot spaces being well dug, and the 4-foot spaces being made into bed trenches, by throwing a good spit from them on the 5-foot ridges. These ridges will have the second crop of Peas along the centre, Radishes and Spinach at the sides; and the trenches, before the Celery is ready, will come in for bedding plants, Lettuces, and Potatoes. A little shade from the Peas will do much good to the Celery.

FRUIT GARDEN.

Proceeded with pruning out of doors, and will follow with lime-syringing to keep the birds away. The lime also tends to keep the bark clean and free from moss and lichens. Covered a Vine border with about a foot of fermenting material, 6 inches next the soil being hot. This border had merely a few inches of litter to keep out the frost previously. We would have given a little heat earlier but for being short of material. We would also have kept the heavy rains off, but had not covers; but when a border is well drained the water soon passes away, and if a little litter is put on, it acts so far as thatching. Covered also the border of a Peach house with a few inches of litter, as the trees are beginning to move, not to give heat to the soil, but to prevent it being cooled. A slight sprinkling was over the border all the winter, enough to prevent frost affecting it much, if at all. A very little on the ground keeps heat in and cold out. Even Strawberry plants and tender subjects in pots out of doors, although unplunged, will not be injured if a little litter or clean straw is laid over them, so as to leave no openings. Even Vines with roots entirely out of doors, and near the surface too, may be forced tolerably early; and there will be no want of a mutual, correlative action between roots and branches if, without throwing any heat into the soil of the outside border, from 6 to 12 inches of dry litter has been placed over it in the end of October to prevent the heat accumulated in summer radiating from it in winter. In such a case it is as well to let the litter extend beyond the border some feet. One advantage of this plan of conserving heat is that there is no danger of doing any injury by extra heat from fermenting material.

When it is intended to grow Vines in pots from single buds, no time should be lost in having them placed singly in small pots, and then set in a sweet hotbed. The advantage of the single pot is that no injury or check is given to the roots when shifting into larger pots; and growing these buds now into strong-enough canes to fruit early in 1869 depends on growing them on, placing them early this season in their fruiting pots, and ripening the wood early.

Strawberries.—The weather has been dark for early Strawberries. Those coming on must be carefully watered, so as not to be long dry nor wet. No water must ever stand in the saucers until the fruit is swelling, and even then it is not advisable. For beginners it will be better to set the plants in reversed turf, on moss, or anything that will keep a little moisture at the bottom of the pots, and yet prevent moisture standing there. If the soil become very dry the fruit buds will be dried-up and decay; if the soil be kept moist, so as to partake at all of the character of a morass, the buds will rot from an opposite cause. After March shall have come there will be less occasion for being so very particular; but for want of such care in early forcing many plants become blind that otherwise would have produced a good crop. For somewhat similar causes those plants brought on now, plunged in a little bottom heat in pits and frames, must be prevented rooting through the pots. If the heat below is strong, and the roots much encouraged in the plunging material, there will be too much encouragement to mere growth, and the leaves will be so liable to excessive growth, that the flower trusses will be

left behind and come to nothing. This is chiefly of importance in early work, and the rooting-below is of less consequence after the trusses have come boldly, and have opened their blooms. They would then be more independent of particular watering. Rooting through the pots in a hotbed should be avoided in early forcing.—R. F.

COVENT GARDEN MARKET.—JANUARY 30.

We have no change worth notice in our quotations this week. French salading is much improved.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples 1 sieve	2	6 to 4	Melons each	2	0 to 3
Apricots doz.	0	0	Nectarines doz.	0	0
Cherries lb.	0	0	Oranges 100	2	1
Chestnuts bush.	8	0	Peaches doz.	0	0
Currents 1 sieve	0	0	Pears doz.	2	0
Black doz.	0	0	Pine Apples lb.	4	0
Eggs doz.	0	0	Plums doz.	0	0
Figs lb.	1	0	Quinces doz.	0	0
Gobs lb.	1	0	Raspberries lb.	0	0
Gooseberries quart	0	0	Strawberries lb.	0	0
Grapes, Gothouse, lb.	6	0	Walnuts bush.	10	0
Lemons 100	8	0	do. per 100	1	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes doz.	0	0	Leeks bunch	0	0
Asparagus 100	7	0	Lettuce per score	1	0
Beans, Kidney 100	0	0	Mushrooms per lb.	2	0
Beet, Red doz.	2	0	Mustard, Green, bunch	0	0
Broccoli bundle	0	0	Onions per bushel	3	0
Bruss. Sprouts 1 sieve	2	0	Parsley per sieve	4	0
Cabbages doz.	1	4	Parsnips lb.	0	0
Caulsteams 100	0	0	Potatoes lb.	4	0
Carrots bunch	0	0	Kidney doz.	4	0
Cauliflower doz.	3	0	Radishes bunch	1	0
Celery bundle	1	6	Rhubarb bundle	0	0
Cucumbers each	1	0	Savoy doz.	1	0
Endive doz.	1	0	Sea-bird basket	2	0
Fennel bunch	0	0	Shallots lb.	0	0
Garlic lb.	0	0	Spinach bushel	2	0
Herbs bunch	0	0	Tomatoes per doz.	0	0
Horseradish bundle	2	6	Turnips bunch	0	0

TRADE CATALOGUES RECEIVED.

Downie, Laird, & Laing, Stanstead Park, Forest Hill, London, S.E., and 17, Frederick Street, Edinburgh.—*Catalogue of Garden, Flower, and Agricultural Seeds, &c.*

Hooper & Co., Covent Garden Market, London.—*General Catalogue.*

F. & A. Dickson & Sons, 104, Eastgate Street, Chester.—*Catalogue of Vegetable and Flower Seeds.*

T. Bunyard & Sons, Maidstone, Kent.—*Catalogue of Vegetable, Flower, and Agricultural Seeds.*

Wheeler & Sons, Gloucester, "Little Book," *Selected Seed List.*

TO CORRESPONDENTS.

*. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

VIOLETS (J. E.).—The Giant, Czar, and Queen are all single and all hardy.

DRAINING AN ORCHARD (Nob. Subscriber).—Three-inch pipes would be much less liable to choke than 1-inch pipes. Place them 3 feet below the surface. You may root-prune the trees at the same time if you drain now and the trees require the operation.

DRAINING CLAY LAND (E. M. L.).—As far as we can judge from scanty information, the best course for you to pursue would be to drain at intervals of 15 feet, and 5 feet deep, and to pare and burn 9 inches of the whole surface. Mix the manure with the burned clay, spread it, and plough it in. It ought to render the land fertile. If you send five postage stamps with your address, and order "Manures for the Money," you will have it sent free by post. It contains information of all the manures you name.

BATTERSEA PARK (L.).—We have no doubt the plant you mean is *Sempervivum californicum*, which is green tipped with reddish brown, and makes a first-rate edging.

GLADIOLUSES AND LILUM LANGHEIM (J. E.).—They may be sown in collections of herbaceous plants, although there are separate classes for these bulbs, unless there is a special offer to the contrary in the schedule of prices offered.

SALVIA ON THE COL DE TENDA.—Several correspondents suggest that it is *Salvia hermanni*, or Purple-topped Clary.

CYCLAMENS (Woolston).—If you enclose twelve postage stamps and order Nos. 297, 298, and 299 to be sent to you, you will find in them a full essay on the culture of Cyclamens.

SCALE INSECT ON CURRANT BUSHES (T. Garnett, Clitheroe).—The scale insect, with white woolly envelope over the eggs, is the Vine scale (*Coccus vitis*). We do not remember seeing it on the Currant before. Scrape away the rough bark, and paint all the stems with a creamy mixture of half a pound of soft soap and 1 lb. of flowers of sulphur, boiled for a few minutes in two gallons of water.

ROSES ON MANETTI STOCKS—MULCHING (J. G. R.).—"You had better not prune at all the Manetti-stocked Roses just planted, than cut them down to four or five eyes. Such short pruning usually causes them to push from the neck of the stock. They rarely send forth suckers from the roots. Thin out under-wood, cut the shoots to a good eye at the summit of the plants, and shorten the side branches a little to a good eye. Prune them at once, and place litter over their roots. This should have been done before. As soon as blooming is over I shorten my plants a little, and cut them pretty much as above. Sanders's Look on the Vine is published at the office of this Journal. The author was Mr. Ashton Smith's gardener. If you enclose 5s. 1d. in postage stamps with your address, you can have it free by post.—W. F. RADCLIFFE."

COST OF A PIT (E. R.).—Whether £5 would be too much or not for the building of your pit, would depend very much on the quality and size of the stones you used for walls 2 feet in height beneath the surface, and the thickness of the brick walls above the ground. At first sight the sum seems fair; but, then, much depends on these considerations. In all such matters, where the proprietor finds lime and stone, and clears out the ground, it would be better he found also the bricks, tiles for flue, &c., and then contracted for the mere workmanship; or, better still, had it done by day wages by a good workman. You will know better than the thickness of the walls, and if you calculate the expense of this you will easily see what is left for labour. In general, it rarely suits either party to have so much material provided, and the workman to find the rest and the labour. It is better to give no materials, or all, and in the last case contract for the labour, or, which would be as well in such a job, have it done by day wages.

STRAWBERRY LEAVES SPOTTED (G. Pine).—The leaves of your Strawberries are spotted by the frost and other ungenial weather. Those leaves will all decay, but fresh ones will come, and you need not trouble about them. It is just as natural for Strawberry leaves to become thus discoloured in winter as it is for an Oak leaf to turn yellow and fall. We hope that the leaves are old ones, as we believe them to be. If young leaves of this year in house, we should judge they had suffered from extremes of wet and dryness.

YELLOW BEDDING PLANT (Savannah's Winding Shore).—We do not think the half-hardy annual, *Venidium calendulaceum*, so good as *Gazania*. It belongs to much the same class, is orange in colour, and about 12 inches in height, but generally goes off in the autumn.

SETTING A SADDLE-BACK BOILER (W.).—If saddle-back boilers are small we like to set them 2 or 3 inches higher than the fire bars, or grating, on fire bricks or fire lumps, and we need to have a block of fire lump at the farther end, so that the fire should go over it at the top, come round the outside of the boiler, and then along the top to the smoke shaft; but, latterly, if the boilers were large we do not care about this leak-draught lump, but let the end of the furnace serve the purpose. One object is thus gained without a lump—there is no chance of a careless stoker choking-up the space or flue behind it. Terminal saddle-backs save all this trouble. We hardly know what you mean by hollow bars or burs. If you mean pipes for grating, they can only be used when connected with the boiler, and we do not think that they are of much advantage, as they present a coolish surface at the bottom to the fuel, and therefore there at least the combustion is less perfect. If by "burs" you mean fire lumps, we see no objection to their being hollow, though when the hollow was reached in wear they would be useless.

HEATING AND ARRANGING A GREENHOUSE (E. B.).—To do what you propose—namely, heat a propagating house, 8 feet long by 10½ feet wide, and a greenhouse adjoining, 12 feet by 21½ feet, by a flue, we would proceed as follows:—Having due regard to your doorways, so that the flue will not interfere with them, nor descend below them, at the north-west corner of the propagating house place the furnace and chimney, and take the flue along the end and front of the house and back again, which will give you heat enough there for a propagating bed, as alluded to in answer to "NOVICE" last week. This you can manage by a circular turn to the flue, but fitted with a damper, to be used when required. With the exception of this curve, which will enable you to heat the propagating house only, we would continue and return the flues straight, which will place them in the middle, or nearly so, of the greenhouse, and dampers in the flues there will enable you to let the heat in there when wanted. You should have a tank inside the house for rain water, with an overflow to a drain. The greenhouse will do admirably for Grapes; six Vines will do. Have a hipped stage in the middle, and a shelf all round for plants.

FURNACE OF A FLUE-HEATED GREENHOUSE (E. B.).—We do not think the furnace much too large if your furnace bars do not occupy a space more than 15 inches long by from 9 to 12 inches wide. If for such a small house you find the space is too large, then brick-up the farther end, merely leaving space above for the draught to pass into the flue. In a case similar to yours we advised a fire lump to be placed at the farther end of the furnace to lessen the bulk of the furnace fully one-third, and it answered perfectly.

HEATING A SMALL FORCING HOUSE (A Reader, B.).—In the forcing house, 20 feet by 9, and to force early, you will need for heating it from 60 to 80 feet of 4-inch pipes. A flue well made would cost you less at first, and less for fuel afterwards, but it will not be so safe and pleasant as hot water.

VINE BORDER FOR MUSCATS—WOOD FOR DRAINAGE, &c. (A Subscriber to the Journal).—The Muscats will keep well in winter without heat at the roots, and more especially as the border is inside the house. Wood and old roots do not do so well for drainage as stones, &c., as they are apt

to produce fungus. Why not use earthenware drain pipes? The old Vines outside will not interfere at all with the Muscats planted inside, if you give the Muscats light and room enough, and cut away the old Vines as the young ones become established. The Muscats would ripen and colour better if you had more glass, larger squares, and less timber and laps in the house.

LATE VINES—ROYAL ASCOT VINE (H. S.).—As a selection of the best late Vines, you cannot do better than take Muscat of Alexandria, Muscat Hamburgh, Lady Downe's, Alicante, West's St. Peter's, and Trebbiano. The Royal Ascot was exhibited at the Great Show at Bury St. Edmunds last summer, and obtained the first-class certificate of the Fruit Committee. You will also see notices of it in our report of the meeting of the Fruit Committee in our last number, and in another column to-day. It is a valuable Grape, particularly for "winter work."

FRUITING GRAPE VINES (E. A.).—If you grow young Vines strong and ripen the wood well, you may take a crop from them the following season; but in proportion to the crop taken you injure the Vines for ever afterwards. When you want to obtain a crop at once in your house, turn out well-grown canes from pots, and keep some in pots, and fruit these; but those you wish to have as permanent Vines, treat in the way recommended, and only take full crops after three or four years from the planting. The latter plan will be the more economical in the end. To gain both purposes we have planted double the number of Vines—one half to fruit, the others to be established, and then the first to be cut out.

VINERY 15 FEET LONG (A Young Amateur).—If you do not want to grow much below the Vines, then have five Vines—viz., one Royal Muscadine, one Buckland Sweetwater, two Black Hamburgh, and one Trentham Black.

PLUNGING POTTED VINES (Broule Place).—The Vines will be safe enough treated as you propose; but, of course, they will do little good if left in the border.

PLANTING AN EARLY AND A LATE VINERY (S. E. W.).—In the early vinery you might have all the border (17 feet in width), inside, and plant 2 feet from each side, or plant in the middle and train down. As you can have a border outside on the west side, you might, as you propose, give the most of the inside border to the Vines on the east side of the span roof, and, planting the Vines on the west side for that side, allow the roots to go out beyond the wall, protecting the outside border in winter. For the late house we would plant the Vines inside on both sides of the house, and allow the roots to go out into a border on the one side, and beneath the lawn on the other side. Little protection will be needed for these borders, except protecting them from wet in autumn and winter. For each house we would have eight Vines—four on the side. In the first house we would plant one Dutch Sweetwater, one Royal Muscadine, four Black Hamburghs, one White Frontignan, one Black Muscat of Alexandria. For the late house we would have two Muscat of Alexandria, two Newwood Muscat, two Lady Downe's, one West's St. Peter's, one Trebbiano. These will want heat, especially when coming into bloom, and they will keep well.

VINES IN POTS (Young Beginner).—Did we wish to obtain what fruit we could from these rather strong Vines in 8-inch pots, we would leave them in the pots, but set them inside of your 12 or 14-inch pots or boxes, make larger holes in the bottom of the smaller pots, fill up with good compost, and give rich mulchings. However, if you do as you propose—re-pot at once into 12-inch pots, we should merely loosen the roots a little outside the ball, and place the fresh compost firmly between the ball and the pot, on the clear understanding, however, that success will be greatly owing to the practice you propose—namely, plunging these re-potted plants in warm manure, whilst the tops are kept cool or exposed, so as to encourage fresh rooting before the buds swell. See "Doings of Last Week" in last number.

FORCING STRAWBERRIES (Idem).—In the new house, 60 feet by 18, in which you propose having a central bed and two side ones, we cannot say that in these beds you will be able to make Strawberries in pots pay, as we fear they would be too far from the glass for early work. After March and April they would do. The sorts we would recommend are Keens's Seedling, British Queen, Oscar, Sir Charles Napier, and Sir Harry. We have not much faith in the plan of clearing off the Strawberries in the middle of April, and filling with 150 Vines in pots, so far as making money from the plan is concerned. You may use pet Vines for a season or two before other Vines grow; but if you want the house to pay, you should plant Vines to continue at once. Vines in pots if fruited heavily will do little more good.

POTATOES FOR EXHIBITION (Murphy).—The earliest Potatoes for a show in the middle of June, whether from frames or from the open borders, are Hogg's Early Goldstream and the Early Handsworth (Round). The former is a first-rate variety for eating, and the latter, though handsome, is inferior for table use. Soden's Early Oxford is a variety that will give fine round tubers by the above date, but "few in a hill." Of early Kidneys, Sutton's Racehorse, *alias* Mitchell's Early Albion; Mona's Pride, *alias* the old Early Ashleaf (?); Almond's First Early, *alias* the old Walnut-leaved Kidney (?), and Webb's Telegraph, are four Kidneys which will prove the best for the early show table. The first three cannot be beaten for quality. For show varieties in the first week of September, Edgemoor Second Early and Almond's Yorkshire Hero—superior strains of the Lapstone family, as being very handsome and very first-rate for eating. It is doubtful if Wheeler's Milky White could be in perfection thus early in the open ground. It is first-rate. Of round kinds, Transell's Seedling and Danitree's Seedling Round.

EVERGREEN FOR ARCADE (A. G.).—*Crataegus pyracantha* will suit you, and so will the plant you name.

EVERGREENS FOR PYRAMIDS (An Old Subscriber).—*Thuja Lobbi*, *Cupressus Lawsoniana*, and *Thujopsis borealis* all form pyramids, and will bear cutting, but it spoils their natural elegance and gracefulness.

FORCING PEACH TREES IN POTS (Gregory).—Your plunging the pots in a bed of leaves will be proper, providing the heat is not violent, and the pots are gradually withdrawn from it, so that no check may be given. You must not keep them plunged until the roots strike through into the leaves and then withdraw the pots, as the check may cause the fruit to fall or be poor; but it will be beneficial if you can leave the pots in the leaves until the fruit is ripe, otherwise you had better not plug them. The only danger of plunging is a check being given to the trees by the loss of the heat and moisture, or the destruction of the roots that may

find their way through the holes in the pots. Trees planted in borders and trained to a trellis are preferable to those grown in pots, for they give less trouble in watering, but good Peaches may be obtained from trees in pots, and from the trees being in pots they are more convenient and suitable for places where it is not desirable to have a house wholly devoted to them. Many can find room for a few trees in pots, but cannot devote a house exclusively to them, and even in places where there are Peach houses with trees in borders, and it is not desired to force early, a few trees in pots are very useful. Good Peaches are grown, both with and without heat, on trees in pots, and we have no doubt of your succeeding.

PASSIFLORA QUADRANGULARIS (W. H. H.).—There is no need for setting the fruit. It does so rather freely naturally when the plant is not too vigorous, but is rather shy when the plant is grown in rich soil, and has abundance of room for the roots. Confine the roots more, give abundance of air, all the light possible in a position near the glass, and in the early part of the day apply pollen to the stigma with a camel-hair pencil.

Books (Titmouse).—The "Vine Manual" will suit you. You can have it free by post from our office if you enclose thirty-two postage stamps with your address. (A. C.).—No supplement to the "Cottage Gardeners' Dictionary" has been published.

Striking Epacris Cuttings (Titmouse).—The best time to propagate Epacris is from the beginning of March to the end of August, and the earlier the cuttings are struck the better it is for the well-being of the plants, as they can be potted-off and become established before winter. Take a 4 or 6-inch pot, half fill it with crocks, place over these a thin layer of moss or very fibrous peat, and then fill to within an inch of the rim of the pot with a compost of two-thirds silver sand and one-third sandy peat; then make level to the rim with silver sand. This done, take another pot a little deeper and wider, and put into it as many crocks as will raise the rim of the smaller pot to the level of the rim of the larger pot, and the space between their sides fill halfway up with small crocks, next put in a layer of moss, and then fill to the top with silver sand. A good watering having been given, the pots should be placed aside for the water to drain off, which it will be by the time the cuttings are prepared for insertion. In selecting cuttings preference should be given to those that have begun to grow, the young shoots being an inch or two long; take them off with a small portion or heel of old wood, some of the old wood being cut or taken off, and the heel smoothed with a sharp knife. If cuttings are taken from the young growth entirely, the shoots must be somewhat firm, more particularly the base. The cuttings should be put in around the sides of the small pot, and in circles towards the centre, not allowing them to touch each other. They should have a gentle watering and be allowed to dry; the pot should then be plunged in a mild hot-bed or where there is a temperature of 65°, a bell-glass being placed over the cutting pot, with the edge resting on the sand between the two pots. Shade from bright sun should be afforded, and the sand must be kept moist, for if the cuttings droop for want of water success is very questionable. The bell-glass should be taken off once a day and wiped dry. When the cuttings have struck root, the bell-glass should be gradually removed in order to harden them off before pottling.

PELAGONIUMS IN A COLD FRAME MILDEWED (Amateur).—Your only remedy is to keep the atmosphere drier by giving more air. It is hardly possible to keep the more tender kinds in a frame, on account of the frame having to be for a long time closed during severe weather. A little fire heat is necessary. Pick off the worst leaves, cut away any dead or mouldy stems, and dab the mildewed leaves and stems with flowers of sulphur.

PRIVET, BOX, AND RHODODENDRON PROPAGATION (J. H.).—Privet is best propagated from cuttings, which if put in in autumn in the same manner as cuttings of Currants, root well and become good plants in twelve months. Privet may be raised from seed, which should be sown when ripe, in beds of good, rich, light soil. Box, tree Box being the only suitable sort, is propagated by cuttings, which should be put in early in autumn or spring, in a warm sheltered situation in sandy soil. Seed may be sown in spring, and trees from seed grow the most rapidly and make the straightest best wood, which is very valuable. The Rhododendron is best propagated from seed, which may be sown in boxes or pans well drained and filled, or nearly so, with sandy peat and a layer of very fine sandy soil on the top. The surface should be made level and be watered, and the seeds scattered thinly and pressed in, covering them very slightly with silver sand. The pans may then be removed to a cold frame, where attention should be paid to shading from bright sun, and keeping the soil moist by watering through a very fine rose. A little moss may be placed over the pans; this will lessen the necessity for frequent waterings, but the moss must be removed when vegetation commences. The seedlings, when large enough to handle, ought to be pricked-off 3 inches apart, shading and keeping them close until they have again struck root; then gradually admit air until they are fully exposed. Keep the soil always moist, and protect the plants from frost and powerful sun.

WILD TAMARIND SEED SOWING (W. H. R.).—The Wild Tamarind requires the heat of a stove in this country, being a native of Sierra Leone. The seed may be sown now in sandy soil and placed in a stove, the pots being plunged in a hotbed of from 85° to 90°. When the plants appear give a moderate amount of air, and keep the soil continually moist. The nearer the plants are to the glass the less liable will they be to become drawn up. When large enough to handle they may be potted singly in small pots, and grown in the stove. A compost of one-third sandy peat and two-thirds loam, with a liberal admixture of sand, will suit them well. Afford plenty of light and air.

CUTTING IVY (Idem).—When Ivy reaches the top of the wall it is grown should be cut off. This will cause the shoots lower down to spread. If you wish to cover the top of the wall, then you will let the shoots grow over it. To cover a wall well with Ivy the first branches should be trained over the lower part, stopping them frequently so as to cause enough shoots to be produced for covering the wall. This effected, the covering of the upper part is a very easy matter, as the energies of the plant are chiefly directed to the top.

MUSHROOM-GROWING IN A PIT (G. P.).—The space, 30 feet by 3 feet, would answer admirably for growing Mushrooms. We would fill the space to within 1 foot of the top with any description of rather dry littery manure, and make the top foot of horse droppings with most of the straw shaken out. The droppings should be in a moderately dry state when used, and put on in layers, each layer being beaten quite firm before

another is put on. The bed cannot be made too firm. A gentle heat will be produced, and when this has declined to 90°, you may insert pieces of spawn 1½ or 2 inches square in the droppings, just placing the spawn so deeply as to cover it half an inch. The lumps of spawn may be put in 6 inches apart every way. Within a week the surface should be covered about an inch deep with good, rich, turfy loam, and it should be beaten and made quite firm. No water should be given for six weeks, and then the bed should have a gentle sprinkling, and be covered with a little hay. The soil after this should be kept moist, but avoid making it very wet. Protection from frost should be afforded.

PLUM TREES UNFRUITFUL (Idem).—The Plum trees which make vigorous shoots, but do not bear fruit, may be root-pruned, and the Pear trees as well. It will only be necessary to return into the trench the old soil, which is, no doubt, quite rich enough, if not too rich. In that case you may fill the trench with two-thirds loam from a pasture, taking the top 3 or 4 inches with the turf, which may be chopped, but not made very fine. The soil should be of a rather light sandy nature. To this add one-third old mortar from an old building, the older the better, well incorporated with the loam. The soil for the Pears should be a strong loam, but avoid the lime rubbish.

TRIF ASHES AS MANURE (Idem).—They are excellent for manuring all kinds of soils, and would do well for a flower garden, and in the kitchen garden especially for Onions and all the Brassica tribe.

CRINUM CAPENSE CULTURE (St. Denis).—This plant succeeds admirably, grown in pots. Do not put them into large pots now, but shift them into pots twice the diameter of the bulbs, providing good drainage, and using a compost of loam from rotted turves two-thirds, and one-third leaf mould or sandy peat, adding sharp sand liberally. Pot so that the neck of the bulb may be covered with soil. Deep pots are best. Water liberally when growth commences, and copiously when the plants are in full growth, gradually diminishing the supply when the growth is perfected, and in winter keep dry. After a good growth has been made expose fully to light and air, and keep dry, but not so as to affect the foliage. Probably your bulbs will flower, but that depends on the ripening of the growth the previous year.

LIANTHUS DAMPieri TRAINING (Idem).—It may be trained to upright stakes or to a wire trellis; but we consider upright stakes put in round the sides of the pot the best, the shoots being coiled round them. Training to a wall is bad, as walls are generally shaded; but the plant will do trained to anything, whether a trellis, globe, or wall, only do not train it in too thickly, nor keep it too close and shaded.

LILIUM ACRATUM versus LILIUM BROWNII (Idem).—The flowers of *Lilium auratum* are much larger than those of *L. Brownii*, and it is a better kind, but both are very desirable. The wood of Victor Verdier Rose is nearly thornless.

REPOTTING ROSES (A Correspondent).—The best time to repot Roses is early in autumn (September); but it may be done now. In potting, most of the old soil should be removed; but it is well not to injure the roots more than can be avoided. If the plants are required to be kept in small pots, then all the old soil may be shaken away, and any long straggling roots shortened. For soil, use two-thirds loam from a pasture, the top 2 or 3 inches, with the turf, and this slightly charred, chopped rather fine, and mixed with one-third dry old cow dung, will form a most excellent compost. Thoroughly decomposed hotbed manure or leaf mould may be substituted for the cow dung if the latter cannot be had. One-sixth of sharp sand may be added if the loam is not sandy enough. You may prune standard Roses on the Briar stock from this time up to the middle of March during mild weather, and you may cut weak shoots back to one eye, the strong to two or three, and the very strong to three or four buds, cutting-out the very weak and those shoots crossing each other.

HARDY RIDGE MELONS (Idem).—We have grown the American and several other varieties of these so-called hardy ridge Melons, and have had them of good size; but we found the flavour, though fair, not equal to that of Melons grown in frames or pits. They succeed best in a cold frame, with a slight bottom heat at the commencement. We fear you will not succeed with them without glass. Your mode of furnishing bottom heat to plants in pots is certainly novel; but we think the heat thus afforded will be too uncertain, and so liable to fluctuation as to do more harm than good. You may grow Melons in pots in a greenhouse by clearing out all the plants and converting the house into a stove, by shutting it up closely and economising sun heat, giving about one-fourth the ventilation you would were it used as a greenhouse. Your plan is certainly worth a trial. The Melons cannot have too light a situation.

FINE-FOLIAGED STOVE PLANTS (F. G.).—The following will succeed in the same house with Alocasias, Begonias, and Cladiums:—*Maranta Veitchii*, *Croton pictum*, *C. variegatum longifolium*, *Pandanus elegantissimus*, *P. javanicus variegatus*, *Spharogynis latifolia*, *Pavetta borbonica*, *Maranta roseo-lineata*, *M. regalis*, *Roya carnea variegata*, *Hibiscus Cooperi*, *Dracena stricta*, *D. draco*, *D. nigreresens*, *Dieffenbachia Barquiniana*, *Cyanophyllum magnificum*, *Cissus discolor*, *Anthurium Lindigii*, and *Ananassa sativa variegata*. *Alocasia macrorrhiza variegata* you should have kept dry, and if you do that it will assuredly become dormant. The leaves will come all right after a time; but a brisk heat must be given in spring, also a moist atmosphere and slight shade from bright sun.

HERBACEOUS CALCIOGLARIA CUTTINGS (C. W.).—They are not worth the trouble of propagating by cuttings, and never make good plants, at least not equal to those from seed. You may slip off any of the side shoots not showing for bloom, making the base smooth with a sharp knife, and trimming off the lower leaves for half the length of the cuttings, and then insert these in pans in a compost of loam two-thirds, and one-third leaf mould. The pan should be well drained and filled to within an inch of the rim with the compost named, and then to the rim with sand. Insert the cuttings round the sides, and at about 1½ inch apart, give a slight watering, and place them in a house where there is a gentle heat. The atmosphere should be kept moist and close, and shade from sun must be afforded. If the cuttings are taken in summer they may be inserted in a cold frame, and kept close and shaded from sun. When rooted they should be hardened-off, and potted-off singly in small pots.

STOPPING AZALEA SHOOTS (Idem).—You must not stop or remove the shoots that come beside the lower buds, as upon their preservation depend the plant's after-growth and future flowering.

MARRIOTT'S SELF-REGULATING BOILER.—"Rose" wishes to know if any

of the readers of the Journal have tried the above for the heating of hot-houses, and with what success.

POINSETTIA PULCHERRIMA CULTURE (S. B.).—It is a stove plant. It may now be cut down, and cuttings of the shoots form excellent small plants for flowering in autumn and winter. Cuttings with two joints are quite long enough. They should be inserted in sand in a hotbed, and have a brisk heat. The old plant, when it has made fresh shoots an inch or two long, should be repotted. Afford the plants a light and airy situation near the glass, so as to have them strong and dwarf.

VINE MANAGEMENT (A. Norrie).—The Vines with shoots from 4 to 6 feet long, which we presume is the length they are up the rafters, should be shortened to two-thirds their length; but if but recently planted you should cut them down, so that they may just reach the bottom of the rafters. When they begin growing rub off all but two of the uppermost shoots, and when these are a few inches long select the better and rub the other off. That left, you may train up the rafter about 15 inches, not 9 inches, from the glass, and let it grow to the top of the house without stopping, then take out its point above a joint. The laterals may be stopped on the second leaf half way up the rod from the bottom, and at the first leaf at the upper part of the rod. They may be all well to make shoots a foot long, and then be stopped, removing them by degrees in autumn. Do not have any side shoots at the upright part of the glass. You will not have any side permanent shoots until the second year, unless you have left the Vines to some extent up the rafter, then you will leave a shoot as near the bottom of the rafter as possible, another 9 inches higher up the cane on the opposite side, and so on, leaving the shoots 9 inches apart, but on opposite sides of the rafter, consequently the spurs will be 9 inches apart on the cane, and 18 inches from each other on each side.

CHARCOAL (Idem).—The sample of charcoal enclosed is the right kind for garden purposes, especially for plants in pots, and is what we recommend.

SHRUBS AND PLANTS FOR A SMALL TOWN GARDEN (Stephen).—For a smoky town garden the following will succeed; two of each will be quite sufficient for the space you name:—*Aucuba japonica maculata*, *Minors*, *Box*, *Berberis Darwinii*, *Gold* and *Silver-edged Hollies*, *Berberis aquifolium*, *Ruscus racemosus*, and *Skimmia japonica*. Of plants that require peat soil, plant *Rhododendrons* *Blandyanum superbum*, *Gen. John Waterer*, *Lefevreanum*, *Victoria*, *maculatum purpureum*, *cinereum*, and *Everestianum*, one of each; *Azalea hirsuta* and *A. sinensis*, *Erica vulgaris* *Hammuldi*, *aurea*, *Alporti*, *confolia alba*, and *clara*; *Kalmia glauca* and *K. latifolia*, *Vaccinium ovatum*, and *Ledum latifolium*. Of deciduous shrubs, plant *Bibes sanguineum*, white and yellow varieties, and *Lilacs*. Heptacodas do well; also Snowdrops, Primroses, Crocuses, Narcissus, Tulips, Hyacinths, herbaceous and tree Peonies, *Polemonium*

ceruleum, and its variegated variety, *Columbine*, *Papaver bracteatum*, *Phlox verna*, and the herbaceous varieties; *Pyrethrums*, *Pinks*, *Clove Carnations*, *Pulmonaria officinalis*, *Saxifraga umbrosa crenata*, *S. palmata*, *Scilla sibirica*, *Spiraea filipendula plena*, *Viola cornuta*, *Trollius europæus*, *Lythrum poscuium superbum*, *Lilium ausantiacum*, *L. candidum*, *L. martagon*, *Helleborus niger*, *Eranthis hyemalis*, *Draba aizoides*, and *Dielytra spectabilis*.

STRAWBERRIES—ROSES (A. Norrie).—If you refer to our last volume you will find the information you seek.

PAINTING CUTTING FRAMES (S. L. H.).—By painting the inside white more light is reflected upon the plants, and by painting the outside white less heat is absorbed, so that the woodwork is less liable to be warped.

GRAFTING A VINE (M. B. F.).—We have no knowledge of the effects consequent on grafting a Muscat of Alexandria on a Treutham Black, and the results from Vine-grafting have been so anomalous that we cannot venture to express an opinion. Can you not plant a Muscat by the side of the Treutham Black, and graft too? You would then be able to add to our knowledge, and yet lose no time.

THE GENUS CEREUS.—If your correspondent, Mr. Kent, will consult the "Natural History Review" for 1862, page 11, he will find the question of the specific difference of *Cereus sticticus*, *Libani*, and *decidua* fully treated by Mr. Hooker. To decide whether they are distinct species or not would be to solve the slightly knotty question of "What is a species?" Until this is done they appear to have as much right to be called distinct species as a vast number of other trees and plants.—A. O. W.

IMPERIAL BLUE PANSY.—What are the merits of this Pansy as a bedding plant? It was sent out last year by Messrs. Downie, Laird, & Luning; shortly afterwards I had a single plant of it, and the few flowers that escaped the propagating knife were really very fine, of a dark blue, yet not so dark as to be conjoined with purple. How does it succeed when sown in soil not specially prepared for it, and what are its blooming capabilities? Would the result of a cross between it and *Violæ cornuta* be likely to combine something of the profuse-flowering habit of that plant, with the broader breadth and substance of petal of the Pansy?—AYESHIRE GARDENER.

FRUIT TREES UNDER-POTTED (H. Ems).—Fruit trees thrust into pots which just hold them, leaving no space unfilled, and which trees cannot be repotted, may have a rim of zinc 2 or 3 inches deep inserted inside the pot, to hold some forcing sing. We fear that the draughts you kindly offer would not be decorative!

NAMES OF FRUITS (Rev. Mr. McCalmont).—Your Apple is Pearson's Plate. (W. Crocker).—The small Apple is Sam Young, the larger and greener we do not know. Probably it is a local variety, and the name by which you say it is largely may be the correct one.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending January 28th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 22	29.317	28.978	43	39	42	41	N.E.	.02	Densely overcast, rain; overcast and cold; partially overcast.
Thurs. 23	29.198	29.639	37	29	41	41	N.E.	.00	Partially clouded, fine; overcast; brisk wind, frosty.
Fri. . . 24	30.130	29.639	41	27	41	40	S.E.	.34	Clear and frosty; overcast and cold; very boisterous, with rain.
Sat. . . 25	29.783	29.581	49	32	41	39	N.W.	.00	Fine, cold wind; partially clouded, fine; overcast.
Sun. . . 26	30.280	30.638	45	22	42	40	N.	.00	Clear and fine; very fine; clear and frosty at night.
Mon. . . 27	30.247	30.054	46	30	41	40	S.W.	.04	Overcast; rain; densely overcast, mild at night.
Tues. . 28	30.002	29.932	51	32	41	39	S.W.	.59	Densely overcast; overcast and damp; densely overcast.
Mean	29.995	29.693	44.57	27.57	41.28	40.14	..	0.59	

POULTRY, BEE, and HOUSEHOLD CHRONICLE

SEPARATE PRIZES FOR LIGHT AND DARK BRAHMAS.

MESSRS. Worthington, Pares, and Crowley have appealed to secretaries of poultry shows, advocating justice to the Light Brahmas. There cannot be a doubt that a more definite arrangement in the prize list is necessary for the awarding of extra prizes between these two varieties of one class. To ignore the existence of the qualities of the Light over the Dark, or *vice versa*, is indeed one of the greatest errors that could be made in the arrangements of a poultry show, which to be useful and carry out the object intended, should place as far as possible all varieties and classes on an equal footing, more especially in a class that is advancing in the good opinion of poultry fanciers generally, and which is acknowledged to be one of the best descriptions of poultry extant. This is aptly illustrated by the great increase of fresh exhibitors at the principal shows. The correctness of Mr. Pares' remarks as to there being well-filled classes of the Lights is fully proved, as in many shows they exceed in number of entries the Dark. To remedy this evil it is necessary there should be no invidious distinctions; let the prize list be so arranged as to prevent any preponderance of one class of a variety over another.

I have always promoted an equality in the prize lists. If a cup is offered for one variety, either Light or Dark, well

enough; but if a silver cup is offered for the best pen in two or three distinct classes or varieties, then nine times out of ten it will open the doors to a serious, long chapter of complaints, whereas, if confined to one variety, it cannot be otherwise than satisfactory to every one. I am fully alive to the great difficulty committees have in offering silver cups for every variety, but I am confident it would be far preferable to omit cup prizes altogether than couple the varieties.

I hope these remarks may lead to some other secretaries advancing their opinions, for the purpose of obtaining an equality in prize lists generally.—PHILIP WARREN.

FOUR-TOED HOUDANS.

ALLOW me to enter my protest against those who would improve on Nature. Mr. Schröder would do so in robbing Houdans of their fifth claw. Why? That they may be less liable to foot disease. I believe I have kept them longer, and have more at the present time, than any one in England. I have no foot disease; I have never had any. I believe the fifth claw has no more to do with foot disease than the thunder has with hatching Swans' eggs. Let us keep the birds as they have come to us, and as they are described by the painstaking and intelligent M. Jacque in his book as they have been known in France "time immemorial." In these days of criticism and hard competition we should rather try to get up to the standard by breeding good birds than to lower it to admit those of doubtful purity. To do away with the acknowledged attributes

of a breed is to open the door to mongrels of every description, causing vexation to the real amateur, and often bringing a good breed into disrepute.—A SOMETIME DWELLER IN FRANCE.

I HOPE I may be allowed to enter a strong protest against four-toed Houdans. The pure Houdan breed is as clearly five-toed as the Dorking, and where the four toes come out it is due to attempts at crossing with Brahmas and Coelins in hopes of getting more size. This I think has been a great mistake, and the French poultry farmers themselves now find it so.

The Houdan is not naturally a large fowl; it is an excellent layer, and puts on a great deal of flesh on very small bones; and the attempts at crossing, by which four-toed Houdans are produced result in many cases in bad sitters, and in fowls with large bones and less flesh, though a certain apparent size may be gained.—SANGRE AZUL.

I was very glad to see Mr. Schröder's remarks in your last number relative to the fifth toe in Houdans. It is not yet too late to get rid of this ugly and troublesome deformity, and I believe most breeders would be well pleased to do so, if they were not deterred by the fear of disqualification at exhibitions.

In my experience of this valuable breed I have found that a large proportion of the chickens, especially the pullets, come with either four toes or with the fifth toe very imperfectly developed, though the birds possess all the other qualifications of the breed in just as great perfection as their five-toed sisters; and it is mortifying to be obliged to consign promising young birds to the cook merely because they are without a member which can be of no conceivable use to those that have it.

I believe the fifth toe in Houdans is derived from a Dorking cross in some previous generation, thrown in for the sake of improving the size. Many of the imported birds are without it; and I hope yet to see the day when the fifth toe will be considered, as I believe it is, a mark not of purity but of cross-breeding.—EBLANA.

ARE PIGEON ROUP AND CANKER INFECTIOUS? CROSSING WITH MEALY BIRDS.

I CANNOT but think, with all due deference to so great an authority, that Mr. Huie is mistaken when he says that "not one disease to which they (Pigeons) are liable, is even infectious," and that "roup, the most likely of all to be infectious, is not so."

I have been a breeder of Pouters for some years, and during that time the only two serious diseases that my birds have ever been troubled with have been canker in the mouth and roup, but as far as my experience goes, both of these complaints are most decidedly infectious, the former especially so, and I think most fanciers will bear me out in this.

Mr. Huie also strongly condemns a cross between a Yellow and a Mealy Pouter. I possess a few good Yellows, and one of the best birds of this colour that I bred last year was obtained by crossing a Yellow cock with a mealy-barred hen, not a semblance of a bar appearing in the young bird. I also obtained some good-coloured Blacks from a Black and a Mealy, the latter being bred from a Red and a Black.—W. R. ROSE, *Cranley Hall, near Kettering*.

[I am glad Mr. Rose gives me the opportunity of proving my assertions in regard to the diseases of Pigeons, which time would not admit of in my previous communication to the Journal.

During my experience in breeding domestic Pigeons (over thirty years), canker, or cancer, in the mouth has been rare with me. Some years ago I had a young Trumpeter, and just before its being able to leave the nest, I discovered, from the bird's hard breathing, that something was wrong; looking into the throat I found it almost closed by a large lump like a fungus, caused by this disease. The bird not being of much value, with the broad end of a pencil I pressed the lump downwards into the crop. Profuse bleeding followed for a few minutes, and the bird was well, as it flew about for years after without any return of the disease. Neither of the parents of this bird was ever affected. The year before last I had a pair of Mottled Trumpeters, a different strain from the former; the hen had a bad mouth from this disease, yet her mate was never affected by it. They reared four fine birds of their own, and being pressed at the time for feeders, I placed under them a pair of my young Pouters, destroying their own eggs just hatching. This hen and her mate reared the Pouters, and they became

fine, large, healthy birds, all unaffected by the disease. The Trumpeter hen is still alive, and now well.

Roup is a very troublesome disease, still I do not consider it infectious. At present I have a pair of Red Pouters, the cock ten years old and the hen three years, also a pair of Yellow Pouters about nine years old; both pairs were matched all last year, and, strange to say, both hens have been ill with roup since the moulting time in 1866. Sometimes for three or four weeks, or longer, at a time they were quite well, then the disease would return bad as ever, and I have sometimes found in the morning lumps of yellow mucus adhering to the partition boards close to where they had been sitting during the night. The mates of these two hens are, and have been all along, in perfect health and fine show. Both hens laid during the season, and notwithstanding all the "billing and cooing" that went on, their mates never were once affected in the slightest degree, nor even one other bird in my whole collection, from thirty to forty pairs living in the same house.

I hope that Mr. Rose and our other brethren in the "fancy" will consider that I have proved to a demonstration my former assertions; were it necessary I could furnish many other instances.

It is from observations and upon experiments such as these that I found my assertions; and if our friends would only come forward and candidly give us their experience, although in a few lines at a time, we should rapidly advance in our pastime, not on theories or nightmare remembrances, but on a pathway paved with facts "true as steel."

My remarks on breeding the various colours in Pouters were as a matter of course only general. What we want is *detail*, but that we cannot obtain, unless writers understand the subjects on which they write. In breeding for yellow we want a rich, solid, deep orange colour, not a light, or pale, or streaked colour, with or without light or slight touches showing where the bar should be if it were required. Five minutes' consideration will bring us to the conclusion that no bird showing a bar should be introduced, or any bird of such blood. A rich-coloured Red and a Yellow should be matched to breed from for Yellows, the Yellow being the younger bird. The mealy colour of itself is too light, leaving the bar out of the question. I have seen good Yellows bred in the manner Mr. Rose names, but they are seldom up to the mark; besides they are few and far between, and what is most provoking, the birds that are worst in colour, or showing a slight or defined bar, are as a general rule the most handsome.

When I talk of breeding Yellow Pouters, or Pouters of any colour, I point to a strain that will not fail to breed true, marking excepted, in colour. I am not surprised at the colour of the birds Mr. Rose has bred, and in corroboration of this I may mention that I produced a most elegant Blue-pied, and in the following nest a Chequer, from the largest and, I believe, most handsome pair of Black-pied Pouters that were ever seen; the male bird was known by Scotch fanciers as the "Black Prince." These facts show how colours have been mixed, but we have been working for size and shape; these being attained, we shall by-and-by arrive at the desired colour.

Mr. Rose omits telling us what reason he has for thinking the diseases in question infectious.—J. HUIE.]

RAILWAY CHARGES.

THE excessive railway charges that poultry exhibitors have to submit to are a great annoyance and injustice. The most curious circumstance is that I invariably am charged more—in fact, nearly double carriage for my birds on their return journey from any exhibition than I pay when I dispatch them thither. Can any one explain this? or will any one kindly say if he is troubled with the same grievance? For instance, the other day I sent some birds to a show, and pre-paid 2s. 9d.; on their return journey I paid for them 4s. 2d. Cannot we oblige the companies to charge equally for birds both to and fro?—PARTRIDGE COCHIN.

PHILOPETERON SOCIETY.

THIS Society held its twenty-first annual Show on Tuesday the 14th inst. at the Freemasons' Hall, Great Queen Street, Lincoln's Inn. It was a source of regret that on the day of its coming off, owing to a mistake on the part of the manager of the Freemasons' Tavern, the Society had to be content with such a poor substitute for their usual rendezvous—the Grand Hall; as many of the birds, although shown in the mahogany pens of the Society, were seen to a dis-

advantage, which we could not help regretting. We therefore simply give a list of the names of the exhibitors of the birds. Most of the exhibitors are generally foremost at our shows where prizes are competed for, and their names are a guarantee of the quality of their birds, though many members who do not exhibit for prizes showed birds of superior quality.

Pouters were shown by Mr. Volekman and Mr. Thackray; Carriers by Mr. Crossley, Mr. Else, Mr. Betty, Dr. Square, and Mr. Hedley; Almonds by Mr. Esquilant (the President), Mr. Thackray, Mr. Crossley, Mr. Merck, and Mr. Lucy; Short-faced Balds, Beards, and Kites by Messrs. Esquilant, Mr. Percivall, Mr. Merck, and Mr. Lucy; Jacobins by Mr. Morris, Mr. Carrell, Mr. Merck, and Mr. Betty; and Owls by Mr. Hedley and Mr. Crossley. Dragons came from Mr. Crossley, Mr. Percivall, and Mr. Betty; Long-distance birds from Mr. Hudson; Trampeters, Turbits, Pinnswicks, &c., from Mr. Thackray, Mr. Hedley, Mr. Else, and Mr. Percivall; and Parbs from Mr. Crossley and Mr. Hedley.

OLDHAM POULTRY AND PIGEON SHOW.

THIS Exhibition, which opened on the 24th inst., is the first that has been held in Oldham, so that an entry of upwards of four hundred pens must be deemed a great success. That even a far greater number of entries might have been obtained is beyond all doubt, as the Committee felt themselves compelled to decline the applications of very many intending exhibitors, on the simple ground that all available space was already engaged. The Co-operative Hall at Oldham is spacious and well ventilated; but when densely filled, as it was in this case, it is not nearly so well lighted as could be desired for the purposes of a poultry exhibition. In fact, no inconsiderable number of the birds were placed in positions so unfavourable that it was difficult to determine at first sight even their respective varieties. The feeding and attention paid to the specimens were most satisfactory, but from being a first show, some of the minor details would be considerably improved by a greater amount of promptitude and dispatch. However, when in future years the Committee, aided by the experience now afforded them, contemplate other meetings, no doubt these shortcomings will be rectified.

The *Spanish* and *Cochins* were very good classes, some of the White *Cochins* being particularly good. Many of the *Gamb* fowls were excellent, but from over-exhibition some were fast lapsing from good condition. The *Hamburghs* were also superior, but the great want of light prevented them being seen to advantage. The *Polands* were unusually perfect, and embraced a liberal entry. There was a very considerable collection of the new varieties of *French* fowls, and the classes of *Pigeons* throughout were particularly good, a great variety of the newest breeds proving generally attractive. In spite of an extremely high wind, combined with a bitterly cold state of the atmosphere, the attendance of visitors was remarkable, both as to numbers and respectability. Mr. James Dixon, of Bradford, being prevented by the sudden illness of a member of his family from officiating, the whole of the judging was completed by Mr. Edward Hewitt, of Sparkbrook, near Birmingham.

SPECIAL CLASS—First, P. Unsworth, Lowton (Silver *Polands*). Second, K. Dawson, Oldham (Golden-spangled). Third, Mrs. S. Lancashire, Tonge (Silver-spangled *Hamburghs*). Highly Commended, W. Hargreaves, Bacup (Dark *Brahmas*); M. E. Wrigley, Middleton (Gold-pencilled *Hamburghs*); J. Andrew, Ashton-under-Lyne (Golden-spangled *Hamburghs*); J. Clegg, jun., High Crompton, Oldham (Black *Hamburghs*). Commended, Mrs. A. Bamford, Tonge Lane, Cinnamon and Buff *Cochins*; S. H. Stott, Rochdale (Toulose *Geese*). (This was for the Mayor's Prizes.)

SPANISH (Black).—First, Hon. Miss Douglas Pennant, Penryn Castle, Bangor. Second, Mrs. Cliff, Hanley. Third, W. & F. Pickard, Thorne, near Leeds. Highly Commended, N. Cook, Chesham; H. Wilkinson, Earby; J. Thresh, Bradford. Commended, M. Saxon, Manchester.

DORKINGS (Any variety).—First, E. Charlesworth, Manchester. Second, J. White, Warlaby, Northallerton. Third, T. Tatham, Kingsthorpe. Highly Commended, W. H. King, Rochdale. Commended, J. Stott, Healey; Hon. Miss Douglas Pennant; J. White.

COCHINS (Any variety).—First, C. W. Brierley, Middleton. Second, T. Bott, Bury. Third, W. Bamford, Manchester. Highly Commended, T. Maxwell, Salford; Miss E. Hamner, Leighton Buzzard; J. T. Berry, Sheffield; Hon. Miss Douglas Pennant; C. W. Brierley. Commended, S. Harrop, Middleton.

COCHINS (Any other variety).—First and Third, C. W. Brierley. Second, T. Bott. Highly Commended, W. T. Ascroft, Oldham (Partridge *Cochins*); J. Cooper, Oldham (Partridge *Cochins*). Commended, J. Artinall, Tonge, Middleton (White *Cochins*).

BRAHMA POOTRA (Any variety).—First, W. H. King, Rochdale. Second, T. Pomfret, Preston. Third, B. Carlisle, Rishton, Blackburn. Highly Commended, Col. Stuart Wortley. Commended, W. Bamford.

GAME (Black Red).—First, H. M. Julian, Hull. Second, J. Mason, Worcester. Third, W. Biney, Manchester. Highly Commended, J. Jackson, Bury. Commended, C. Travis, Thurgoland, Sheffield.

GAME (Brown Red).—First and Second, C. W. Brierley. Third, E. Close, Kingstown, Dublin.

GAME (Any other variety).—First, C. Travis. Second, M. Julian. Third, C. W. Brierley. Highly Commended, T. Dyson, Halifax; J. Mason. Commended, B. Consterdine, Littleborough.

HAMBURGHS (Golden-pencilled).—First, J. Merrall. Second, H. Pickles, jun. Third, W. Farr, Patricroft. Highly Commended, Mrs. Farguharson, Stow-on-Wold.

HAMBURGHS (Silver-pencilled).—First, W. Wilson. Second, J. Preston. Allerton. Third, J. Smith, Coalham, Earby. Highly Commended, T. Sharples, Crawshaw Booth, Rawtenstall; J. Platt, Dean, Bolton; W. & J. Bairstow, Farncliffe, Bingley.

HAMBURGHS (Golden-spangled).—First, S. Burn, Whitby. Second, T. Ogden, Hollinwood. Third, R. Simpson, Chadderton. Highly Commended, K. Dawson; H. Pickles, jun.; F. Greenwood, Rochdale; R. Simpson, Chadderton. Commended, T. Ogden; F. Warbrick, Oldham; J. Preston; J. Andrew.

HAMBURGHS (Silver-spangled).—First, S. Lancashire, Middleton. Second, S. & R. Ashton, Mottram. Third, W. Parr, Patricroft. Highly Commended, J. Preston; J. Jackson, Bury. Commended, J. Lancashire, Tonge, Middleton.

HAMBURGHS (Black).—First, J. Hope, Chadderton. Second, Rev. W. Serjeantson, Acton Burnell Rectory. Third, Mason & Walker, Deaton, Manchester. Highly Commended, C. F. Copeman, Birmingham; R. Fitton, jun., Oldham; J. Lancashire; Mrs. M. Lancashire, Middleton. Commended, J. Hope; J. Jackson; W. Farr; Mason & Walker, Denton, Manchester.

POLANDS (Any variety).—First and Second, P. Unsworth. Third, W. and T. Pickard, Thorne, Leeds (White-crested Black). Highly Commended, R. Charlesworth, Manchester (Black with White Crests); W. & T. Pickard (Silver-spangled). Commended, E. & H. Comber, Warrington (Silver-pencilled); R. Charlesworth (Black with White Crests).

BANTAMS (Black or Brown Reds).—First, R. Charlesworth. Second, J. Allen, Oldham. Third, W. Biney, Manchester. Highly Commended, S. Harrop, Middleton; J. Butterworth, Blackley, Manchester; J. Davies, Oldham; C. Outram, Sheffield; C. W. Brierley. Commended, J. R. Robinson, Sunderland; J. B. Riley, Orvendale.

BANTAMS (Any variety).—First, Tonkin & Tuckey, Bristol (Black). Second, (Mason & Walker, Black). Third, S. & R. Ashton (Black).

ANY OTHER VARIETY NOT NAMED ABOVE.—First, Miss E. Hamner, Leighton Buzzard (Creve-Coeur). Second, Col. Stuart Wortley (La Fleche). Third, N. Cook, Chesham (Houdans). Highly Commended, S. H. Wood, Diggle, Saddleworth (Andalusians); T. Robertshaw, jun., Ilkington (Andalusians); R. Charlesworth (Malays).

DUCKS (Aylesbury).—First and Third, E. Leech, Rochdale. Second, M. Farrand, Dalton, Huddersfield.

DUCKS (Rouen).—First, J. J. Stott. Second, T. Bott. Third, E. Leech. Commended, T. Wakefield, Golburn, Newton-le-Willows.

DUCKS (Any other variety).—First, C. W. Brierley (Shell Ducks). Second, S. & R. Ashton (Carolinas). Third, T. C. & E. Newbitts, Epworth (Enochs Ayrean). Highly Commended, S. Burn, Whitby (Black East Indian); C. W. Brierley (Carolinas). Commended, J. Robinson (Wild Duck and Drake); T. C. Harrison, Hull (Carolinas); R. Charlesworth (Black East Indian).

GESE (Any variety).—First, S. H. Stott. Second, E. Leech. Third, and Highly Commended, E. Brooks, Oldham (Spanish). Commended, J. Wrigley.

SELLING CLASS.—First, S. & R. Ashton (Golden-spangled *Hamburghs*). Second, P. W. Story, Daventry (White feather-legged). Third, W. & F. Pickard (Silver-spangled *Polands*). Highly Commended, K. Dawson, Cowlishaw, Oldham (Gold-spangled *Hamburghs*); N. Cook, Yew Tree House, Chesham (White *Cochins*); J. Holt, Middleton (Black *Hamburghs*). Commended, Mrs. Bamford, Manchester (Buff *Cochins*); J. Horrocks (Partridge *Cochins*); T. Gratton, Rochdale (Golden-spangled *Hamburghs*); J. Buckley, Werneth (Golden-pencilled *Hamburghs*); J. Andrew (Golden-spangled *Hamburghs*); K. Dawson (Black Spanish); H. W. Illingworth, Tile, Leeds (Buff *Cochins*); H. Wilkinson, Earby (Black Spanish); C. W. Brierley (Rouens).

PIGEONS.

CARRIERS (Any colour).—First, J. Waterhouse, Oldham. Second, H. Yardley, Market Hall, Birmingham. Commended, H. E. Whittaker, Middleton.

TROUBLES (Any variety).—First, J. Fielding, jun., Rochdale. Second, R. Whittaker, Delph Mill, Bolton. Highly Commended, R. Whittaker; T. C. & E. Newbitts (Almonds); H. Yardley. Commended, T. Newell Ashton-under-Lyne.

FANTAILS (Any colour).—First and Second, H. Yardley. Highly Commended, R. B. Chowler, Bolton Park, Skipton; J. Waterhouse; T. C. and E. Newbitts.

OWLS (Any colour).—First, J. Fielding, jun. Second, T. Newell. Highly Commended, H. Whittle, Newton Heath; J. Waterhouse; J. Walsh, City Wheatley, Halifax; J. Fielding; F. Sale, Derby; H. Yardley.

BARBS (Any colour).—First, T. Newell. Second, H. Yardley. Highly Commended, J. Fielding, jun.

DRAGONS (Any colour).—First, S. Shore, Newton Heath. Second, F. Sale, Rose Hill, Derby. Highly Commended, J. Waterhouse; D. Bromley, Over Hulton, Bolton; H. Yardley. Commended, S. Dronsfield, Oldham; J. Hill, Drayliden.

ANY OTHER DISTINCT VARIETY.—First and Extra Third, H. Yardley (Ice Pigeons, Black Fairies, and Blue Swallows). Second, T. Newell (Fairies). Highly Commended, T. Taylor, Oldham (Antwerps); H. E. Whittaker (Black and White Trumpeters); F. Sale (Yellow Jacks); H. Yardley (Archangels, Monks, and Swallows). Commended, J. Fielding (Red Turbits).

JEDBURGH POULTRY SHOW.

For the last ten years this Show has held a high position among the poultry exhibitions of North Britain, and it is a matter of congratulation to find that this year's meeting, which took place on the 21st, 22nd, and 23rd inst., has been more signally successful than any of the preceding ones. The entries numbered about sixty pens more than last year, and birds from the first poultry yards in the kingdom added much to the interest of the meeting. The Committee are most zealous and united in their exertions to promote the welfare of their Show, and the great additional support this year received in the way of subscriptions shows that the public appreciate the value of the undertaking.

It was a somewhat unexpected feature to find the *Spanish* so well shown in a district so far north as Jedburgh, for certainly, even as a whole, they would hold favourable comparison with the majority of shows, even in the south of England; and the *Dorkings*, for the most part, were scarcely less creditable, the "Silver Greys" being evidently the most popular variety of this useful breed in this particular district.

of *Cochin-China* fowls, and *Brahmas*, there was a most excellent display. *Hamburghs* mustered very strongly, and were mostly exhibited in first-rate condition. The *Pouter*s were the only variety that scarcely held so high a position as they have formerly at this Show. The unfavourable weather of late, it must be remembered, is especially unfavourable to these smaller breeds. *Geese*, *Ducks*, and *Turkeys* were shown by the most noted of our breeders, and a better display could not be wished for. *Carolinians*, *Mandarins*, *Shell-Ducks*, and other scarce breeds made the Variety class for Ducks especially interesting.

It was at Jedburgh, some few years back, that "selling" classes proved themselves so popular, and judging from the great number of birds entered and the large amount of sales effected, they still stand well in the good opinion of amateurs generally.

The collection of *Pigeons* was far in advance of those of preceding years, the competition in most of the classes being unusually close; and although it may appear invidious when all are so good to select any varieties especially, we cannot avoid mentioning the *Pouters*, *Owls*, *Jacobins*, and the Variety class, as being throughout of most extraordinary merit.

Fine bright weather gave additional zest to the Show; and the company embraced most of the nobility and gentry of the neighbourhood, together with an attendance on the last day hitherto quite unexampled.

SPANISH.—First, J. Taylor, Morpeth. Second, J. M'Innis, Broomlands. Third, J. Nelson, Eaglescliffe. Commended, Capt. Scott. *Chickens*.—First, Miss B. Ridpath, Edinburgh. Second, J. M'Innis. Third, J. H. Wilson, St. Bees. Highly Commended, W. Paterson; J. M'Innis. Commended, W. Paterson; D. Gellatly, Melrose.

DORRINGS (Coloured or Silver).—First, T. L. Jackson, Eush Ewes. Second, Lord Binning, Mellerstain. Third, Lady Baird, Newbith (Silver). *Chickens*.—First, W. Snowie, Philiphaugh. Second, Lord Binning (Coloured). Third, J. H. Wilson. Highly Commended, Miss Milne, Otterburn; T. Raines, Stirling. Commended, T. L. Jackson (Dark); D. Gellatly. *Pullets*.—First, A. Curle, Melrose (Silver). Second, T. L. Jackson. Third, M. Brooksbank, Manchester (Coloured). Highly Commended, Miss Milne (Silver); Lord Binning (Silver).

COCHIN-CHINA (Any variety).—First, J. Shorthose, Newcastle-on-Tyne. Second, E. A. Aglionby, Eastwaite Lodge, Hawkshead (Partridge). Third, E. A. Aglionby (Buff). Commended, W. Morris, Aberdeen; Bowman and Fearon, Whitehaven; Gunson & Jefferson (Both). *Chickens*.—First, Gunson & Jefferson, Whitehaven (Buff). Second, J. Nelson (White). Third, J. H. Wilson. Commended, W. R. Park, Abbotsmeadow, Melrose.

BRAHMA POUTRA.—First, J. Shorthose. Second, J. A. Dempster, Stirling. Third, T. Raines. Commended, J. Craw, Jedburgh; J. Poole, Ulverston. *Chickens*.—First, Mrs. Waugh, Lochmaben. Second, K. Jopp, Aberdeen (Dark). Third, D. Murray, Back Row, Selkirk. Highly Commended, E. A. Aglionby. Commended, K. Jopp (Dark); W. R. Park (Dark); M. Brooksbank; J. Craw.

GAME (Any variety).—First, G. Spalding, Kington. Second, H. M. Julian, Hull. Third, J. Brough, Carlisle. Highly Commended, J. H. Wilson. *Chickens*.—First, W. Urquhart, Langholm (Black Red). Second, H. M. Julian. Third, W. Tait, Heatherlie, Selkirk (Brown Red).

HAWKSBROS (Silver or Golden-spangled).—First, A. Heattie, Selkirk (Golden). Second, W. R. Park (Silver). Third, Bowman & Fearon (Silver). Highly Commended, W. France, Crief (Silver). Commended, J. F. Lovelace, Newark-on-Trent (Golden).

HAMBURG (Silver or Golden-pencilled).—First and Second, W. R. Park (Gold and Silver). Third, R. Barrow, Longtown (Golden). Highly Commended, Bowman & Fearon (Golden). Commended, W. & J. Baird, Fearncliffe, Bingley (Silver).

GAME BANTAMS (Any variety).—First, J. R. Robinson, Sunderland (Black Red). Second, W. Mabon (Dackwings). Third, T. Raines (Black Red). Highly Commended, Miss E. Oswald, Auchincruive (Black Red); Akroyd and Scott, Sunderland (Black Red); R. Macgregor, Perth (Black Red). Commended, W. Mabon, Jedburgh (Brown Red); W. Euston, Jedburgh (Brown Red).

BANTAMS (Any other variety).—First, T. Watson, Laners House, Crief (Golden Sebright). Second, J. R. Jessop (White Booded). Third, F. L. Roy, jun., Northorne, Kelso (Silver Sebright). Highly Commended, T. C. Harrison, Hull (Gold Laced); S. & R. Ashton, Mottram (White); J. R. Robinson (Black).

GEES (Any variety).—First, Mrs. Rirkett, Ainstable, Penrith (Toulouse). Second, R. Reed, Longtown (Grey). Third, Lord Binning (Toulouse). Commended, R. Shortreed, Kelso.

DUCKS (White Aylesbury).—First, W. Hood, Jedburgh. Second, D. Hardie, Sorbie Ewes. Third, Bowman & Fearon. Highly Commended, Little & Davidson, Canobie; A. Hogart, Leslie, Fifehire.

DUCKS (Rouen).—First, D. Hardie. Second, R. Shortreed, Atterburn. Third, Capt. Scott. Highly Commended, J. Gray, J. U. Sommer, Jedburgh.

DUCKS (Any other Distinct Breed not before mentioned).—First, T. C. Harrison, Beverley Road, Hull (Mandarins). Second, J. Jennison (Shield Drakes). Third, J. Jennison (Carolinians). Highly Commended, T. C. Harrison (Carolinians); J. Craw (Black American); J. Jennison.

TURKEYS.—First, J. Smith, Goutham. Second, T. L. Jackson. Third, H. Merkin, Driffield. Highly Commended, Lord Binning.

ANY OTHER DISTINCT BREED NOT BEFORE MENTIONED.—First, W. R. Park (Crève-Cœur). Second, J. Sword, Jedburgh (Gouldres). Third, J. A. S. E. Fair, Overwells, Jedburgh (White Dorkings).

SINGLE COCKS.—*Dorking*.—First, J. Y. Crig, Kirkcaldy. Second, Miss Milne. Third, T. Raines. Commended, D. Hardie. *Game*.—First, A. Thomson, Carlisle. Second, H. M. Julian. Third, J. Brough, Carlisle. Commended, T. Watson, Crief (Brown Red). *Hamb*.—First, Bowman & Fearon. Second, J. U. Sommer (Silver-spangled). Third, W. Bowe, Carlisle (Silver-spangled).

SWEETSTAKES FOR BANTAM COCKS.—First, J. L. Brown, Selkirk (Black Red). Second, J. Scott, Jedburgh (Black Red). Third, J. Dailie, Belle Vue, Aberdeen (Black Red). Highly Commended, J. Park, Jedburgh (Black Red); G. Yule, Melhewles (Brown Red); A. Wight, Jedburgh (Black Red). Commended, H. Scott, Jedburgh (Grey); R. Macgregor (Black Red); W. Paterson, Jedburgh (Brown Red); G. Pringle, Jedburgh (Black Red); J. Horley (Black Red).

SWEETING CLASS.—First, Gunson & Jefferson (A Flock). Second, J. A. S. E. Fair (Aylesbury Ducks). Third, T. L. Jackson, Driffield. Highly

Commended, W. R. Park (White Cochin); R. Benson, Darlington (Cochin-China Partridge); G. Bell, Wigton, Cumberland (Black Red Game); J. Musgrove (Silver-pencilled); W. Sinton, jun., Monklaw, Jedburgh (Turkeys). Commended, W. Bowe (Golden-pencilled Hamburgs); W. Lawrenson, Eaglescliffe (Silver-pencilled); R. Burrow (Golden-pencilled).

COTTAGEERS' PRIZES.—First, W. Sword (Gouldres). Second, H. Purves, Hawick (Dackwing Game). Third, J. Scott (Black Red Game). Highly Commended, W. Scott (Red Pile Bantams); W. Laidlaw, Sharp-law, Jedburgh (Silver-spangled Hamburgs). Commended, T. Brown, Jedburgh (Silver-spangled Hamburgs); R. Petherford, Jedburgh (Silver-spangled Hamburgs); G. MacMillan, Jedburgh (Duckwings Game Bantams); J. Hervey, Jedburgh (Black Red Bantams); W. M'Indie, Jedburgh (Spanish). Highly Commended, W. Scott (Pile Bantams); W. Laidlaw, Sharp-law, Jedburgh (Silver-spangled Hamburgs).

PIGEONS.

TUMBLERS (Short-faced).—First, R. Whittaker. Second, C. Cowburn, Cals, Leeds. Third, J. Hawley. Highly Commended, J. Hawley; F. Key, Beverley. Commended, T. Rule, Durham; C. Cowburn; J. Fielding, jun.

TUMBLERS (Any other than Short-faced).—First, J. Pringle. Second, J. Hawley. Third, G. Fawdon, Gateshead. Highly Commended, J. Hawley; H. Yardley; J. Fielding, jun.

FANTAILS.—First, W. R. Park. Second, J. Thompson, Bingley. Third, H. Yardley. Highly Commended, W. Martin, Ayton; W. R. Park; A. Crosbie, Melrose; J. Sharp, Johnstone. Commended, J. E. Spence, Musselburgh.

POUTERS.—First and Third, J. Grant, Corstorphine. Second, F. Key. Highly Commended, W. Martin; C. Cowburn; J. Grant. Commended, J. Hawley; H. Yardley; C. Cowburn.

NUSS.—First, B. Davidson, Swinton, Jedburgh. Second, W. R. Park. Third, W. Veitch, Jedburgh. Highly Commended, F. Key.

OWLS.—First and Second, J. Fielding, jun. Third, J. Thompson. Highly Commended, R. Patterson; T. Spence, Musselburgh; W. R. Park; J. Grant. Commended, W. R. Park.

TURBITS.—First, R. Patterson. Second, J. Fielding, jun. Third, W. R. Park. Highly Commended, J. Thompson; G. Fawdon; J. Scott; B. Patterson. Commended, J. Thompson; J. Campbell, Langholm; F. Key; G. Yule.

JACOBS.—First, J. Thompson. Second, G. Yule. Third, J. Spence. Highly Commended, J. Campbell; C. Cowburn; J. Sharp; P. A. Renwick, Kelso. Commended, J. Hawley; P. A. Renwick.

ANY OTHER VARIETY.—First, W. Martin (White Dragon). Second, J. Hawley (Starlings). Third, H. Yardley (Ice Pigeons). Extra Third, J. Thompson (Isabels). Very Highly Commended, C. Cowburn (Archangels); J. Campbell (Black Magpies). Highly Commended, J. Fielding, jun. (Carriers); J. Bell, Newcastle-on-Tyne (Carriers); W. Robertson, Glasgow (Black Carriers); P. A. Renwick (Black Barbs); J. Grant (Rough-legged Tumblers). Commended, H. Yardley (Toys); J. Sharp (Ice Pigeons).

SELLING CLASS.—First, R. Davidson (Victorias). Second, J. Thompson. Third, J. Hawley. Highly Commended, R. Patterson (Turbits); J. Hawley; A. Goodfellow, jun. (Blue Pouters); J. Thompson; F. Key; P. A. Renwick (Turbits). Commended, A. Goodfellow, jun. (Black Carriers); J. Thompson; W. R. Park (Owls).

CANARIES.

SCOTCH FANCY (Yellow).—*Cock*.—First, R. Bell. Second, J. Kemp. Highly Commended, R. Bell. Commended, W. Hardie. *Hen*.—First, J. Hope, Galashiels. Second, J. Blaikie.

SCOTCH FANCY (Buff).—*Cock*.—First, J. R. Thompson. Second, G. Park. Commended, R. Scott, Jedburgh. *Hen*.—First, R. Bell. Second, J. Kemp. Commended, W. Tinline, Galashiels.

BELGIAN FANCY (Yellow).—*Cock*.—First, G. Park. Second, B. Gilchrist, Berwick-on-Tweed. Highly Commended, D. White, Leith. *Hen*.—First, J. Kemp. Second, W. Tinline.

BELGIAN FANCY (Buff).—*Cock*.—First, H. Donald, Galashiels. Second, J. Kemp. Commended, W. Tinline. *Hen*.—First, D. White. Second, B. Gilchrist. Commended, W. Tinline.

FLOCKED (Yellow).—*Cock*.—First, J. Hope. Second, W. Forrest, Galashiels. Highly Commended, J. Cleghorn, Galashiels; A. Ferguson, Kelso. *Hen*.—First, J. Dalgleish, Galashiels. Second, W. Tinline. Commended, G. Walker, Kelso; J. Cleghorn.

FLOCKED (Buff).—*Cock*.—First, J. Keith. Second, J. Dickson, Leith. Highly Commended, T. Darling, Hawick; G. Hollands, Jedburgh. Commended, S. H. Jeffrey, Jedburgh. *Hen*.—First, J. Hope. Second, G. Hollands. Commended, W. Tinline; J. Wallace, Jedburgh.

JUDGES.—For *Poultry* and *Pigeons*: L. Hewitt, Esq., Eden Cottage, Sparkbrook, Birmingham. For *Canaries*: J. Robertson, Esq., Barnstisland.

UTILISING AND UNITING CONDEMNED BEES.

(Continued from page 88.)

HAVING unpacked my empty hives, and all things being ready, I proceed either by close or open driving as may be best suited to my purpose. The first being the most rapid and certainly the least formidable to a beginner, whilst it answers every purpose when it is not desired to capture the queen, I will begin by describing it. Commence by standing the bucket firmly on the ground about a yard from the stock to be operated upon. Unroll the cloth and cord, taking care of the pin, and lay them, with two empty hives and a bee cloth, on the ground beside the bucket. Next light the fumigator, and blow a little smoke into the hive's mouth. As soon as the bees retire the hive must be slightly raised from its floor board, and a few whiffs of smoke blown under it all round. Then boldly lift the hive altogether from its place and steadily invert it on the bucket, covering it immediately with one of the empty hives, and closing the junction of the two by first wining the cloth round them, and temporarily fastening it by means of the pin,

and then firmly securing it by four turns of the small cord, taking two turns round the upper and two round the lower hive, and tying the two ends together. The bees within being thus safely enclosed, the floor board should be swept clear of stragglers, and immediately covered with the bee cloth, upon which the second empty hive may be placed to amuse those returning from the fields, and the united hives with the bucket conveyed to a shady spot at a little distance. Here it will be found very convenient to stand the hives and bucket upon one of the borrowed chairs, whilst the operator seats himself upon the other, and then a smart and regular rapping of the full hive with the palms of the hands should take place. In about ten minutes the great majority of the bees will generally be so alarmed as to quit their own domicile and take refuge in the empty one—a fact which may be ascertained by listening to the noise made by them in ascending. At the expiration of from ten to fifteen minutes the cloth may be removed, and the hives sufficiently separated by raising one side of the upper one to admit of inspecting the interior. Few bees will be disposed to escape, and very rarely will they commence an attack.

If nearly all have ascended into the hitherto empty hive, it may at once take the place of the decoy hive on the floor board, and the few remaining bees having been brushed out with a feather, the full hive may be conveyed in-doors. If, on the other hand, many bees still adhere to their original domicile, or if, as is sometimes the case, only a few stragglers are found to have quitted it, the one side of the upper hive should be upraised a few inches, and, being prevented from slipping by the iron skewer being stuck into the edge of the lower hive on the opposite side, kept steadily in that position with the left hand, so as to permit an unobstructed view of the interior, whilst the under hive is rapped smartly with the right. Believing, as I do, that the jarring of the combs is the principal cause which impels the bees to ascend, I disregard the dictum of authority, and always rap on one side of the hive which is opposite to the sides of the combs, endeavouring so to regulate the force of my blows, that whilst the vibration of the combs is so great that a bee can scarcely keep its footing on them, the concussion shall not be sufficient to detach them from their foundations. Such energetic measures admit of little delay on the part of the poor bees; a cry somewhat analogous to that of "*Sauve qui peut!*" speedily arises among them, as with vibrating wings and uplifted tails they "skedaddle" into the cheerless and ungenial shelter of an empty hive. During this rush upwards it is well to moderate the violent rapping into gentle tapping, just sufficient to keep the bees moving. If, as will probably be the case, the first exodus should not be sufficiently general, recourse must again be had to vehement rapping, and in this way a succession of panics may be produced until scarcely a bee remains in the hive.—A DEVONSHIRE BEE-KEEPER.

CHANGING FLOOR-BOARDS—CORK FOR HIVES.

In changing the floor-board is it necessary to loosen the hive from its board with a knife, or is the hive forced upwards with a screwdriver?

Is there any advantage or disadvantage in using a sheet of cork for the sides of a frame hive instead of the usual pressed straw? Of course all the edges of such a hive must be made of wood as usual. If there is no disadvantage, what thickness should the cork be?—C. A. J.

[An exchange of floor-boards should be effected with as little disturbance as possible. It would, therefore, be better to loosen the hive from its board with a knife the day before making the exchange.]

We are not aware that cork has ever been made use of as a material for frame hives, although we think it would be a good one, and should, therefore, like to see it tried. The usual thickness of a sheet of cork would probably do very well.]

OUR LETTER BOX.

OXFHAM SHOW (*An Exhibitor*).—Too many circumstances are unknown to us to justify our giving an opinion.

NEWARK POULTRY SHOW.—We are informed that by an error in the catalogue, the Rev. J. Chapman was stated to have taken the second prize in the Selling Class, whereas it was given to the White Cochins of Mr. F. D. Johnson, of Birmingham.

MARELE NEST EGGS (*A. E. F. C.*).—They are white or of a light cream colour and answer perfectly. They are to be bought of statuenries. There are composition eggs almost as hard to be bought at Mr. Baily's,

113, Mount Street, Grosvenor Square. We believe eggs of this sort are the only real cure for egg-eating. We have watched hens pecking at them pertinaciously, but they, of course, gave up the task in despair.

WEIGHT AND COLOUR OF DORKINGS (*C. X. H.*).—Nine pounds are a capital weight for a Dorking cock in stock condition. Two hens that weigh 15 lbs. are excellent birds. There is no standard of colour for Dorking hens. The white in the cock's tail is not of the slightest importance. The weights we have quoted above are not the heaviest that are ever met with, but they are good enough for success, and are hard to beat in running condition. Any practical breeder, or any one conversant with Dorkings as a breed in counties where no others are kept, will tell you the talk about colour as an index to purity is nonsense.

HENS PECKING THE COCK'S COMB (*C. C.*).—You will do well to remove the cock for a few days till the comb is healed. The sight of blood and raw meat is so tempting to the hens, that they will continue to peck at it till they have eaten through it. When it is quite dry you may put him back again, but in the meantime let the hens have plenty of green food, lettuce if possible. If, as we suppose, your fowls are not at full liberty (as we seldom meet with these cases save where the birds are in confinement, though not necessarily in a small space), let them have, if they have it not, grass in a growing state cut with heavy sods of earth; they will eat it all. Feed them also very sparingly. Cases like these often arise from over-feeding, and from a fat and craving condition of stomach. We have never known this treatment to fail in effecting a cure. You can rub the cock's comb either with citron or compound sulphur ointment. While we are on the subject we cannot help noticing that the cocks seem to like the process of having their combs and faces eaten. We have seen a Spanish cock stand still while the whole of the white sac that forms "the face" has been eaten, and when the hens had to jump to reach it, he has complacently lowered his head, to suit their convenience.

AYLESBURY DRAKE WITH WILD DUCK (*Old Duck*).—The cross you mention produces a very good Duck when you have it on the table, but it is open to one objection. The Aylesbury, if she sit at all, is a very hard sitter. It is generally considered a mistake to breed between sitters and non-sitters. You need not doubt the fertility of the union. We speak from experience when we say it is a certainty.

BOILED PARSNIPS AND CARROTS FOR POULTRY (*Rosa*).—Fowls will eat both carrots and parsnips boiled without injury, but they are not profitable food. If given at all, they should be given raw and chopped fine. Boiled potato is better food, but that is unprofitable if given unmixed with meal. Where fowls are kept largely on vegetables, as in Ireland, we invariably find they become very fat, but make no flesh, and always have diseased livers. You will do better and keep your fowls more economically on really good food, than on these poor substitutes. It is impossible to make badly-fed poultry pay its expenses, but where it is generously, not extravagantly fed and kept, we believe you may eat eggs and chickens for little or nothing, being paid for by those that go to market, or are otherwise sold. Ground oats, barley meal, occasional boiled potatoes, kitchen and table scraps and sweepings, with sometimes Indian corn, are the best food.

PLUMAGE OF DARK BRAHMAS AND GAME BANTAMS (*X. T.*).—You do not say in what part of the plumage the white feather shows. We cannot understand that it would be objectionable in any part of a Dark Brahma. It would be fatal to success in Black-breasted Red Game. The eggs may be set after three days, having previously ascertained that the cock is attentive to the hens. At this time of the year, especially, they sometimes have strange fancies and dislikes.

RED TINGE ON THE FACE OF A SPANISH PULLET (*W. and W. C.*).—It is never safe to discard a Spanish pullet eight months old because she has red over the eye. We have known such to become quite white after a few months more; but if it is the dark deep red that looks as though it laid on a black under ground, we have little hope.

A SPANISH COCK'S COME (*Idem*).—It should be of medium size, beginning near to the nostril, and going well over to the back of the head, not only upright, but stout enough to warrant the belief it will remain so. The spirals should not be long, and the entire surface should be smooth; there should be no indentation or thumb marks in front.

NEITHER MONEY NOR COCKRELL (*W. F. C.*).—We should write to the police, and then either deal with Mr. White before a magistrate or in the County Court, according to the information we received. We have your second letter. On no account send more money, but instruct your solicitor to sue at once. The *RECEIPT* ought to be returned, deducting 3d. for the office charge.

INFLUENCE OF MALE FIRD (*H. E. Limerick*).—We are of opinion that the influence continues until the hen is broody—that is, has laid her whole clutch of eggs. Some persons think three weeks having elapsed after intercourse has ceased is a sufficient time.

ALMOND TREMBLES (*L. F. Ferrié*).—The book is not sold by the booksellers.

LARK WITH CANARIES (*S. G.*).—A lark would do no harm in an aviary, but we would not advise keeping one along with the Canaries, more especially if they are expected to build. The materials for building may be given to Canaries about the 20th, or end of the next month.

SEX OF CANARIES (*W. A. J.*).—The bird being hatched so late in the year, will not be old enough to breed from until about next May. As to sex, it is difficult to decide when the bird is so young. Place the bird in a separate cage, and you will soon see whether it attempts to sing, if the male you speak of be in song.

PAYNE'S COTTAGE HIVE (*An Ardent Lover of Bees*).—If you purchased one, and there is a straw-hive maker near you, he must be very dull if he could not copy it, and thus supply your cottagers cheaply. We do not know the wholesale price.

BEES DECREASING IN NUMBER (*A Working Cabinet Maker*).—The probability is that the weak colony is dwindling away, owing to the death of its queen, and in this case it will be better to unite it to the next stock. It is only under very exceptional circumstances that it becomes necessary to confine bees whilst snow lies on the ground.

ISLE OF PERU.—If "T. C. H." will refer to map 30 in A. Keith Johnston's "Handy Royal Atlas," in the position I before indicated—among the islands in the North Pacific Ocean—he will find the small island of Peru.—W. H. K.

WEEKLY CALENDAR.

Day of Month	Day of Week	FEBRUARY 6—12, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.		Day of Year
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.		m.	a.	
6	Th	Meeting of Royal, Linnean, and Chemical	46.5	32.8	39.5	20	33	af 7	56	af 4	54	af 2	42	af 6	13	14	21	37
7	F	Meeting of Royal Institution. (Societies.	46.7	32.7	39.7	22	32	7	58	4	9	4	35	6	14	14	25	38
8	S	Royal Horticultural Society, Promenade.	45.4	32.1	38.8	21	30	7	0	5	23	5	18	7	14	14	28	39
9	S	SEPTAGESIMA SUNDAY.	45.0	31.5	38.3	16	28	7	2	5	49	6	55	7	16	14	30	40
10	M	Meeting of Royal Geological Society.	44.4	29.6	37.9	15	26	7	4	5	9	8	25	8	17	14	31	41
11	Tu	Royal Horticultural Society, Annual	44.1	29.7	36.4	18	25	7	5	5	26	9	54	8	18	14	32	42
12	W	(Meeting, 3 P.M.)	45.6	29.4	37.0	16	23	7	7	5	38	10	21	9	19	14	31	43

From observations taken near London during the last forty-one years, the average day temperature of the week is 45.2°; and its night temperature 31.1°. The greatest heat was 65°, on the 10th, 1831; and the lowest cold 3° below zero, on the 11th, 1845. The greatest fall of rain was 0.67 inch.

CORDONS.

READERS of this Journal will not regret seeing the subject of cordon-training so ably taken up by the Editors. I have frequently in these pages and elsewhere recorded my own convictions as to the very great advantages of a system that with obvious modifications is so well adapted for our climate, and which for orchard houses will soon alone prevail.

I regret that Mr. Robinson will not be induced to accept my definition of cordon-training as given eight years ago in my work so entitled; but as the view is supported by excellent authority, and especially by that of the Editors of this Journal, what is here stated is merely supplementary. Mr. Robinson did good service to the cause of cordon-training when he had an opportunity of doing so as correspondent of the leading journal; but why did he confine his praise of the system to only one form of it—the horizontal cordon? This is a very old acquaintance of mine now, and for edgings of borders merits every praise, always provided that the right stock be employed, which is of the greatest importance. I should not call 500 feet of such edgings “toy cultivation,” but look to it for a succession of the very finest table Apples in the world. The fact is, that in a large garden no single style of culture should exist, but various modes of training would give a better chance of good results.

Professor Du Breuil first tried cordons as far back as 1843 in the public gardens of Rouen. He began, not with the Pear, as many think, but with the Peach. The reason, he tells us himself, was the excellent one that the Peach tree, by the time it had reached the summit of an ordinary garden wall, had attained to its point of greatest production, and that it could not be maintained at that point, but must begin to decline from that date. Therefore he placed trees diagonally and closer together, and succeeded in realising all his expectations. Since that time a quarter of a century has elapsed; and if we may believe the leading authorities abroad, this form has remained pre-eminently that which produces the finest fruit and the heaviest crops, covers the wall the soonest of any, and is the simplest to manage. Why is this? Because the diagonal form, representing the angle naturally formed by a fruitful branch with the main stem, is in accordance with first principles. A vertical cordon has the defect of alluring the sap upwards; a horizontal cordon causes the branches to languish. Not that these defects are at all unmanageable, but they exist, while in the spiral and diagonal cordons they do not.

The single diagonal cordon is the “*cordon oblique simple*” of M. Du Breuil. I believe that I am responsible for this change of term, now generally accepted. Diagonal cordons are regularly advertised now. The reasons for changing the name were these. Every one knows what diagonal represents, while oblique is vague. Besides, the terms vertical cordons and horizontal cordons being in general use, diagonal was the nearest corresponding term to these for trees at an angle of 45°.

I must here re-introduce an old acquaintance, Professor

Gressent, whose works have, I was told last year, a very large sale, and are approved by the Minister for Agriculture in France. He says, “Diagonal cordons produce as much alone as all the other trees in any garden. They are the most easy to form, suit every kind of tree, and produce soonest the very finest fruits.”

M. Du Breuil commenced the system with this form, and it is still his favourite. To this may be added my own experience. I have for fifteen years cultivated all kinds of trees in this form with perfect success on the open wall, and for twelve or thirteen years in the orchard house. These are the oldest diagonal cordons, strictly so called, in England, and they are as good as ever this season, and full of promise. Such cordons should have a certain amount of space in every garden with a good wall, not for Peach trees, but for Pear trees especially. We planted last season some Pear trees for this form extremely well prepared by Mr. Rivers. Never have I seen better. Some were double-worked, the first of this mode I have tried. No doubt they will be a success. Trees double-worked as single diagonal cordons were not even heard of till very lately.

The cordon system has been gradually developed since its origin, a quarter of a century ago. It will soon become further modified, and, no doubt, scarcely then resemble what it was at first. This must cause some confusion in terms. M. Du Breuil himself tells us that when he went to see M. Grin's close system at Chartres, in 1856, he was so charmed with it that “he does not hesitate to recommend its adoption to the exclusion of all others.” The cordon of the present day, therefore, unites the leading ideas of these two systems, both founded on strict regularity of detail, as opposed to loose and irregular pruning, such as is so common here and abroad.

Cordons also mean close pruning; if not, the beautiful, regular “*coursonnes de Montreuil*” would have a claim to the term; but these, however symmetrical, require laying-in of long shoots, several successive tyings-up, and much removal with the knife. All this is unknown in the cordon *pur et simple*, which depends, and is founded on, the more modern theory of the close summer-stopping of the shoots, as opposed to the old system of hardly stopping them at all. In the old ways, and even at Lepere's, where there is the very best long pruning in France, the extremities of the leading branches were extended only to be elaborately suppressed; while in cordon-training, after the first few seasons, they are trained-in much as they extend. In loose long pruning, and in regular long pruning, the leading idea is to extend and to lay-in a greater or less length of summer wood. In cordon-pruning this is never done. Nor is cordon-training mere spurring-in, for it demands symmetrical and regular forms, and eschews completely any idea of forking branches. For these reasons all standard pyramids, and all bush trees in pots, are not cordons.

We must take cordon-training as it now is, modified by the lapse of twenty-five years. Still it retains the germ of the original idea, which idea rules modern fruit-culture, and that is, more trees and closer pruned, symmetrically

trained, evenly balanced, and with close summer-stopping as a prominent feature in all its modifications.

If we consider M. Grin's idea of a cordon as being unsuitable to our sunless and humid climate, we must remember that, like M. Du Breuil, he has advanced since he began years ago to the point of merely bisecting the stipular leaves. His original pruning was not so close as this, but the idea was the same—an idea, as Professor Gressent says, "founded on the normal principles of fructification"—viz., that of suddenly arresting and condensing the sap at the base of growing shoots and spurs.

I well remember, years ago, being at M. André Leroy's nursery at Angers pruning with M. Lévard, one of the very best pruners I ever saw. After a hard day's work, as we were leaving the gardens M. Leroy met us, and said he was thinking of sending Lévard to Chartres to study a new system of close pruning, of which he, M. Leroy, gave us some few details. M. Lévard did not like the new system, and never went to Chartres, and years after I found him still at M. Du Breuil's first style; but immediately on my return to Guernsey I cut back the whole of my Peach trees in every form to the new system, and have ever since carried it on, modifying it as occasion seemed to require, and never seeing M. Grin's trees till much later. The result of these experiments induced me to publish the "Modern Peach-Pruner," in which pruning to four leaves is recommended for the Peach, and working by alternate shoots. This was a combination of the *coursommes de Montreuil* with the close pruning of Chartres, and this last extended to four leaves, as a minimum, being of these regular systems a modified and combined view which contains the idea of a pure cordon, taking care that the leading branches do not fork, and be in some geometrical form. It is, however, the oldest regular cordon-training in this country.

This much may suffice to supplement, as I said before, the excellent work of the Editors; but does not the thought strike every one that it is owing to the poverty and confusion of our horticultural terms that much of this doubt as to the meaning of "cordon" has arisen? What, for instance, shall we say of such a term as the "irregular fan," when we know that a fan is not irregular, but the contrary? Why this dread of the introduction of foreign terms when we have the word *espalier* in such common use? What have we as an equivalent for "cordon," understanding it as we do? What word shall we employ, so as to be universally understood, to describe a tree with a single main stem and with horizontal branches and the ends turned upwards? Nevertheless, every one abroad would at once say a *palmette Ferrier*. But should the tree have a double-central leader (as we saw at the Paris Exhibition, and which is one of the neatest modes possible to control the sap), and the branches be trained obliquely, horizontally, or *à la Ferrier*, how should we designate it?

The word *palmette* is scarcely very happy, and we need not retain anything beyond a few expressive words borrowed from the French, but it is high time that horticultural terms were settled on some recognised basis.

We may rest satisfied that the orchard house of the future, if a lean-to, will have diagonal cordons planted against the back walls. Spiral cordons (one of the purest forms of cordon), will supersede all others but bush trees in pots for borders, when planted in groups of three or five. If the house is a span, then diagonals parallel with the house cannot be surpassed for beauty, or produce, or simplicity of training. On the open walls diagonal cordons of Pears and choice Apples will soon occupy their share, while low horizontal cordons for edgings for the borders will also be generally adopted. Some portions of a large garden being thus devoted to cordons, need not interfere with larger forms trained in other ways. In a good garden of suitable size something of every style of any pretension should have a place.

When cordon-training has been once fairly tried, its merits cannot fail to be recognised by English gardeners, who, in reality, are so superior in most things that any prejudice is out of place with a spirit of investigation and of fairness. For amateurs cordon-training is admirably suited. Its simplicity must recommend it. As to its injuring the life of trees, I can only say I have not found it so after these many years of heavy cropping.—T. BRÉHAUT.

SOME OLD PLANTS.

In page 46 is a query about a *Salvia* with the terminal leaves of a violet colour, found by "D. S." on the slope of the Col de

Tenda. I have no doubt that the plant is the Purple-topped Clary (*Salvia sclarea*), once so common in our gardens, but now rarely seen. It is a native of Syria and Italy. The inflorescence of *Salvia bracteata* has purple bracts, but it is a Russian plant, and cannot be the one alluded to.

There is another query, I believe, unanswered, about the plant called the Double Yellow Rocket, which is very fine. If those wishing for the information will look into any book on English botany they will find a plant called *Barbarea vulgaris*, or Yellow Rocket, of which the flower in question is a double state; the plant is, therefore, *Barbarea vulgaris flore-pleno*. It is a great favourite in cottage gardens, and deservedly so.

The Red Rocket, a neat, beautiful plant, is *Lychnis flo-scuculi*, or the Double Ragged Robin, which is rather scarce. This, however, must not be confounded with the purple variety of the Garden Rocket, which is *Hesperis matronalis purpurea plena*, and is so apt to die off that few can keep it. That truly beautiful plant the old dwarf Double White Rocket is plentiful in some localities. Cottagers about here who know how to manage it grow it profitably for market, as it is keenly looked after as a trade plant. The larger sort called the Giant, inferior, though fine, is often substituted for it, but a practised eye will detect the true sort at a glance.—THOMAS WILLIAMS, Ormskirk.

COCCOLOBA PLATYCLADA FOR DINNER-TABLE DECORATION.

PLANTS for the decoration of the dinner table at the present time are in such great request that every one suitable for that purpose is made use of. There are few plants better adapted for the purpose than that which I have named. It is an exceedingly interesting and curious-growing plant, introduced from Solomon Islands, with singular flattened branches, bearing oblong or hastate leaves, small whitish flowers, and fleshy fruits, at first red and then purple. Having used this plant myself, I can highly recommend it to those who may not have it. It succeeds well in an intermediate house. In colour it is of a lively green, and its habit is very graceful. The long flattened leaves are covered or rather edged more or less with small leaflets in an irregular manner. I never placed a plant on the dinner table that caused so much interest, or that looked better. It is also very useful for bouquets as it stands so well. J. GARDNER, *Aston Hall Gardens*.

POTATOES.

EVERY year convinces me more and more how very ignorant we are on the subject of the Potato disease; at the same time it seems to me that we do gain some insight into one fact—viz., that atmospheric causes, and especially wet, have much to do with it, and that to speak of any one particular variety as being free from disease is simply a fallacy. Some may be of harder constitution than others, but given the conditions favourable for the development of the disease, and no variety will be then able to withstand it. I am strengthened in this impression by observing the condition of my own stock this year. Last season (1866), I had a most disastrous time, and came very short in my supply. This season (1867), we were favoured in this part of England with a very fine August, which tended to make our harvest an excellent one; and as I took my Potatoes up before the September rains set in, I was saved the annoyance of seeing them spoiled, and have not had certainly a gallon of bad ones up to this time. Had I tried some of the many nostrums recommended, or grown one particular sort, or cultivated them in any exceptional way, I might have laid it to one or all of these things; but as I did nothing out of the way, and went on in the old routine, I can ascribe this result to nothing but the favourable weather that we had. Amongst other varieties I had a piece of the Salmon Kidney, the best late-keeping Potato grown, and this in August was seized violently with disease in the haulm. I immediately cut it down, much to the amusement of a market gardener (and a good one too), near me, who said it was no manner of use—that would not stop the disease. Fortunately for me it did, and so I hope to have good Potatoes until the new ones come in. I should add that I have for the last two years well lined my roots when I have taken them up, and I rather fancy that this has tended to keep them dry; dampness is, I believe, most favourable to the development of the disease.

In giving my estimate of varieties it must be borne in mind,

first, that I do not speak as a market gardener, do not take into account the cost and productiveness of the crop, but what is best suited for a gentleman's table—that is then, that I place flavour and quality first, appearance second, and productiveness third. The second point is that to which I have already alluded—that I do not hold to any variety as free from disease. Perhaps I should add that I grow my Potatoes in two separate places—one in an enclosed garden with rich friable loam, the other an open field with a somewhat heavier soil, but dry and open; and that hence, probably, my estimate is very different from that of others.

The varieties thus grown were—

VARIETY.	WHERE GROWN.	WHERE OBTAINED.
1. Early Ashleaf	Garden	Home-grown.
2. Myatt's Prolific Ashleaf	ditto	ditto
3. Early Don	Field	Downie, Laird, & Laing.
4. Coldstream Early	ditto	Hogg & Robertson.
5. Ross's Early	ditto	Mr. Thomson, Drem.
6. Lapstone	Garden	Sutton & Sons, Reading.
7. Late Lapstone or Daintree's Seedling	ditto	Home-grown.
8. Milky White	Field	Wheeler & Son, Gloucester.
9. Yorkshire Hero	Garden	Rev. W. F. Radclyffe.
10. Fenn's Onwards	ditto	Mr. Fenn, Woodstock.
11. Premier	ditto	Home-grown.
12. Salmon Kidney	Field	Rev. W. F. Radclyffe, and
13. Coomb's Favourite	Garden	J. Dickson & Sons, Chester.
14. Paterson's Victoria	ditto	E. Banks, Esq., Sholden.
15. Silver Seedling	ditto	ditto

1. *Early Ashleaf*.—There is little need to say anything about this well-known Potato. Its only fault is that it is a poor cropper; but I am told that Veitch's Early Ashleaf is of the same quality and much more productive. Much dependance can be placed on it for the first new Potatoes.

2. *Myatt's Prolific Ashleaf*.—An excellent Potato, very nearly of the same quality as the preceding, and a very good cropper. It is extensively grown about here by the market gardeners, and always commands a ready sale. Those who, like myself, prefer Kidney Potatoes, will give it preference to the early Round Potatoes.

3. *Early Don*.—I received this from Messrs. Downie, Laird, and Laing, and consider it to be an excellent Round variety. It comes in about the same time as Myatt's Prolific Ashleaf, is very prolific, white in colour, very floury, and of excellent flavour.

4. *Coldstream Early*.—Another Round Potato, very similar to the foregoing, equally mealy, and well flavoured; it is also very prolific.

5. *Ross's Early*.—This was very kindly sent to me by Mr. Thomson, of Drem, with a statement that, as he had to supply Potatoes for baking, he had found this to be the best variety for that purpose. He advised me to plant some large tubers whole, and said that I should be astonished at the result. I did so, and certainly the fine large tubers clustering round the stem were a sight. It keeps well, and is especially desirable for baking.

6. *Lapstone*.—I see nothing to alter as to what I have already said concerning this, the best of all Potatoes. It doubtless requires, to grow it in perfection, a light rich soil and a good climate, and would not probably succeed well far north; nor does it like wet. I have grown it very successfully this year, and have no hesitation in saying that there is no Potato that comes to my table at all comparable to it. For a main crop it is especially dependable.

7. *Late Lapstone or Daintree's Seedling*.—This partakes very much of the character of the preceding, but is not equal to it in flavour. I may be wrong, but it seems to have a little of the Fluke blood in it, and all that race I think very little of.

8. *Milky White*.—This now-celebrated Potato needs no commendation of mine. It well deserves its name, for it is the very whitest Potato grown. It is also prolific and a fair keeper.

9. *Yorkshire Hero*.—I do not see, either in growth of the haulm or in the tuber, the least difference between this and No. 7, and have heard the same remark made by other growers.

10. *Fenn's Onwards*.—An early Potato, kindly sent to me by "UPWARDS AND ONWARDS." The seed was Round, but the produce was pebbly—neither Round nor Kidney. It is exceedingly floury, and so very delicate in texture that it is not easy to peel it after it is boiled. It is, for a Round early Potato, an admirable sort.

11. *Premier*.—An early Kidney Potato; but I do not consider it as good as Myatt's Prolific, and have discarded it.

12. *Salmon Kidney*.—Known here as Deene Hall Kidney and Irish Kidney; the best of all late Potatoes. It is very peculiar in shape, being very full of eyes, but it keeps good up to the middle of June.

13. *Coomb's Favourite*.—This is nothing but a selected strain of the Lapstone; a very good one, but still nothing more than this.

14. *Paterson's Victoria*.—The best of all Mr. Paterson's much-vaunted seedlings, but without any great thing. It is large, rampant in growth, prolific enough, but not mealy—in fact, like all Mr. Paterson's, it is a field and not a garden Potato.

15. *Silver Seedling*.—A beautiful looking Potato with a silvery skin, but watery.

Such is my estimate. And now to the practical results. Plant early, and take up early. The disease generally comes on about the first week in August. If the weather be fine after that I should have no hesitation in leaving the Potatoes in the ground until September; if it set in wet I should be equally determined in taking them up. They will make no growth after the haulm is attacked by disease; and they will not be injured if taken up on a dry day and well limed before being stored. For my own use I intend for the future to grow the old Ashleaf, to be followed by Myatt's Prolific Ashleaf, Lapstone for the main crop, Salmon Kidney for late crop, and Ross's Early for baking.

I hope it will be distinctly understood that I only speak from my own experience, and that I believe locality and soil have a great effect on Potatoes, as with fruits, vegetables, and flowers of all kinds, varieties which succeed in one locality being utterly worthless in others. A notable example of this occurs in a contemporary a week or two ago, in which an amateur writes from Ireland of Lord Macaulay Rose as a flabby, dingy-coloured, badly opened, badly constituted Général Jacqueminot, while we regard it as one for which Portemer deserves a medal for raising.—D., Deal.

UNCOVERING ROSES.

FOLLOWING Mr. Radclyffe's directions, I covered my Roses in December with fern, and placed stable litter over that. We have had a most unusually mild season, and the Roses so far need not have been covered at all. I examined some of them the other day, and found them all making fresh shoots underneath the covering. Céline Forestier has shoots 3 inches long. Would it be well, as long as the weather continues mild and wet, to uncover them gradually, replacing the covering when the cold spring winds commence? I am afraid of the young tender shoots rotting-off beneath the mass of damp covering.—Q. Q.

[The season is comparatively mild, and Roses are forward here. I presume the Roses covered with fern are Teas and Tea-scented Noisettes. They may be uncovered this mild weather gradually; and if the frost return severely, they must be covered again till danger is over. I do not anticipate any more frost severe enough to injure Roses. In a few days I think of taking off the Asparagus haulm—a capital protection—from my Teas and Tea-scented Noisettes. If the new shoots are rotted "Q. Q." must have excluded the air, which should never be done. The Roses have three eyes; and if the centre eye, which breaks first, rots off, or is killed by the frost, it is of no consequence. The two other eyes will break in due time, and the best branch can be suffered to remain, and the other may be shortened back.

Céline Forestier here has a new flower formed. Roses will be early this year. The National Rose Show in my opinion is fixed too late, especially for amateurs and nurserymen who have small stocks. Hence the large stockholders carry off the prizes every year. In 1861 Mr. Turner wrote to me saying (June 20), "I am bloomed out." This does not conduce to national Rose-growing, the main object for which the Society was originated by the Rev. S. Reynolds Hale.—W. F. RADCLYFFE.]

THE SEED PODS OF ODONTOGLOSSUM GRANDE.

A PLANT of this Orchid, after producing five spikes of bloom in 1866, showed a pod, which grew to the size of a hen's egg. This continued on the plant all last year, and the blooms of last year have produced another pod, both of which appear quite green at this time, and have no appearance of ripening, although the plant is in robust health and preparing to bloom

next season. What I wish to know is, Whether the pods will perfect seeds, and how long I ought to allow them to remain?—H. M.

[One of the most experienced of Orchid-cultivators informs us that the seed pod of the *Odontoglossum* should be left on the plant until it bursts. As the pod in the above instance is still green, there seems to be no doubt it will perfect seed. The time occupied in ripening it varies from ten to twelve months, or even more.]

CRACKING OF CHASSELAS MUSQUÉ GRAPE AND STANWICK NECTARINE.

It may not be generally known, that the cracking of Chasselas Musqué Grape can be prevented by making a notch in the wood between the rod and the bunch. The operation should be performed immediately after the stoning of the berries, and the notch should be cut at least half way through the wood. The border at ripening time should be rather dry, and the usual amount of air ought to be given.

This Grape does with less stimulant at the roots than many other kinds; indeed, the Vines require soil specially prepared for them.

We have for several seasons past been successful in securing good crops of the Stanwick Nectarine, almost free from cracking, by applying the knife to the fruit-bearing wood. Immediately the fruit has begun the "second swelling," a notch is made into the pith, the same as with the wood of the Chasselas Musqué Vine. The fruit ripen off of a golden colour, the side next the sun is of a deep crimson tinge, and the flavour is of the finest description.

Last season a few of the fruit were allowed to crack before they were observed; the notching of the wood was then resorted to, and the wounds in the fruit soon healed up, and they swelled to a fair size, ripening equally well with the general crop, and being little inferior, except that they exhibited some scars where a little gum oozed out, and which was carefully taken off after it became hard. The wood thus notched is, of course, cut out at pruning time, to be succeeded by shoots left for bearing the following season. The tree thus receives no injury from the use of the knife. Previous to notching, to prevent the Stanwick Nectarine cracking, we tried every means we could devise, such as lifting the tree, placing it in a position on the back of a Peach house where the sun had greater power, keeping it dry at the roots, and giving an extra circulation of air, but with no apparent beneficial results. The crop always set as thickly as Gooseberries; all the fruit became cracked when of the size of Walnuts.

I should be glad to learn the experience of others with this excellent Nectarine, as it is seldom to be seen. It may be more successfully managed in orchard houses.—M. TEMPLE, *Gardener, Balbirnie, N.B.*

THE ROYAL HORTICULTURAL SOCIETY'S EXHIBITIONS FOR 1868.

At the risk of appearing captious in finding any fault with the just and interesting review by your contemporary of the programme of the Royal Horticultural Society for the coming season, I will venture a few observations upon it.

It recommends certain additions to the rewards offered by the Society to exhibitors, but I feel confident that this course will not secure the permanent and mutually beneficial arrangements which are aimed at. Better results may be obtained by some course in which the exhibitors and the Society shall have an interest in common, and by which exhibitions shall be self-supporting. We have evidence that such a course is possible.

Mr. Paul receives no prizes for his show of spring flowers, but the exhibition must repay him in some way. He finds, probably, that his reputation as a man of skill and enterprise is advanced by it, that Fellows and other visitors go to see it, and that trade naturally follows. Messrs. Waterer & Godfrey are also willing to show their plants without direct money reward; and I see in the Society's Almanack that Messrs. Lane are about to follow in the same footsteps. Here, then, are exhibitions, and very fine ones, made without any inducement in the way of prizes.

Nor is this all. In June a glorious display of Zonal Pelargoniums is to be anticipated, this being the growers' own day

when the "subscription prizes, in which they naturally take more than a passing interest [the italics are mine], will be competed for."

In these two classes of phenomena—the desire of nurserymen to exhibit without prizes, and the readiness of exhibitors to subscribe for their prizes, is the best hope for the future of exhibitions. Without much examination of details, it is pretty clear that shows as at present managed do not pay. The Royal has now one great show in lieu of three, and throws out hints of discontinuing even this one; and the Botanic has cut off all its spring shows. If more shows are cut off, Fellows will cut off their subscriptions, and then cultivators in their turn will be cut off from the opportunities now afforded to them of exhibiting their horticultural successes. The only safety lies in making shows self-supporting.

Judging from the Pelargonium example (is there not also a Potato sweepstakes coming off?) it appears not unreasonable to expect that wherever much interest is felt in the cultivation of a particular flower, whether on account of the profit it may bring to the seller, or by reason of the pleasure it may give to the grower, it is only necessary for the Society to provide the arena, and the competitors themselves will be ready to contribute the prizes; and in prizes contributed by themselves, the competitors will, as is truly observed, "naturally take more than a passing interest." People value most that which costs them something.

I have, therefore, written to the Council to propose that they shall invite the Tulip fanciers, the Pansy fanciers, and the fanciers of Carnations, Picotees, Dahlias, Hollyhocks, and Chrysanthemums, and their respective growers, as well as cultivators of Strawberries and Cucumbers, Peaches and Peas, to make up so many friendly matches among themselves, offering them every facility for contesting the championship in these various subjects. The Society ought to stand the expense of the bands, provide the judges' fees, and make all the arrangements, as their contribution to the entertainment, and perhaps it might not be too liberal a measure on their part if they contributed towards the expenses of the exhibitors, whether prizetakers or not, one-half the receipts at the doors.

Such a plan would be safe both for the exhibitors and the Society. Each exhibitor would invite all his friends to the Show; some part of their expenses at least would be recovered, and the Society would run no risk. And the Society ought not to run risks. Some ten or twelve years since it would venture everything on the chance of a fine day, and we all know the result. I hope that it has now grown wiser. I trust that the Council now feel that the worst misfortune that can befall a body is not to be able to pay its way, and that their imperative duty is to assure themselves that the arrangements they propose will not entail difficulties and disgrace upon the Society for which they are acting. To send round the hat periodically, and take the sense (ought I not to say, take advantage of the weakness?) of the subscribers concerning their mismanagement amounts to dishonesty, and the liberality of Fellows has been more than once thus imposed upon in days gone by.

If the Council, then, are persuaded that they already venture enough on prizes, I, for one, am for letting them alone. I greatly respect Mr. Micawber's maxims on revenue and expenditure. Income, £1. Expenditure, 19s. 6d. Result, happiness. Income, £1. Expenditure, 20s. 6d. Result, misery.

Have patience with me while I observe upon one other feature of your contemporary's recommendation. I have no wish to depreciate the value of the labours of the Fruit and Floral Committees. I believe them to be doing good service, and to be an essential portion of the Society's organisation, but I cannot help remarking, when it is suggested that the additional minor shows recommended shall be tacked on to the Floral and Fruit Meetings, that the general body of the Fellows cannot enter the Exhibition room until the Committees have finished their labours and their luncheons, and that immediately after the eating is done, the talking begins. The consequence is, that unless one is sufficiently bold and rude to walk about the room whilst Mr. Bateman is lecturing, one must rest content with the distant view of the flowers from the seat one happens to occupy, for no sooner is the lecture over than the plants are seized away from under one's eyes or nose, and there is such a general scramble to get them back into the vans again, as to suggest that somebody disagreeable may be expected to catch the hindmost.

Lectures are all very well in their way, and I have no doubt of their being very useful to good listeners and inquiring horticulturists.

The Fruit and Floral Committees have their own proper work to do. They were instituted to judge of, and to certificate, new and rare plants and fruits, and subjects grown at Chiswick. Add ordinary flower-judging to their work, and their speciality ceases. On the other hand, the Society has its gala day each week, and for this day such minor exhibitions would be suitable attractions. It already shows on that day examples of its own culture at Chiswick. Why should it not endeavour to supplement its own little shows with an occasional competition on the sweepstakes principle, and give us the opportunity of judging by comparison how far the Society is leading the world in gardening? If it cannot join in the sweepstakes, which, perhaps, it ought not, it can at all events stimulate its own cultivators to increased exertion by some little bonus each time that the merit of its own productions is pre-eminent. But the majority of the Fellows prefer small talk; and their daughters love to see and be seen, to listen to the band, and to listen to compliments, and these Mr. Berkeley never pays them. Mr. Bateman is more gallant, I own, but even his pretty speeches are, of necessity, too general to be very telling. Now, although I flatter myself I am too good a horticulturist to desire to convert our fine old Society into a mere fashionable resort, I confess to a weakness for pretty faces as well as for pretty flowers; and as I cannot think the brave old horticulturists of the palmiest days of the Chiswick *fetes* could have feared any ill results to their loved pursuit from bright eyes and gay dresses, from music and flirtations, I propose a time and place for the new shows which will secure these attractions.

Let us, then, Mr. Editor, have your support for holding minor shows of florists' flowers on Saturdays, or if not on Saturdays, on Wednesdays. On these days there is "no House," and surely our Senators are entitled to some consideration; there must be a goodly sprinkling of flower-lovers among them.

The time, however, for holding the shows might, if they provide the prizes, well be left to the exhibitors. If they think that snatched glimpses of their flowers in the Council room will serve their purpose better than prolonged examination of them in the conservatory, there is nothing more to be said, and I shall regret that I have already said so much.—ANOTHER F.R.H.S.

ORNAMENTAL AND FLOWERING SHRUBS.

Nothing in gardening is more remarkable than the immense number of Roses, Dahlias, Hollyhocks, Pansies, Chrysanthemums, Antirrhinums, Pelargoniums, Fuchsias—but I must stop—"The Gardeners' Year-Book," under the heading of "New Flowers of the Year," is conclusive as to the futility of enumerating all the genera, to say nothing of the varieties following in battalions. True, there are no species in "New Flowers of the Year," but the species which we see one year in the list of "New Plants," we may find in the next with a host of varieties all advancing by rapid marches from the "starry" to the "circular" and "globular outline;" some "excellent," others "distinct," "very fine," "beautiful." Then we have "Vice-President, a decided improvement on Chairman," "a colour much wanted," "a superb and beautiful introduction," "a fine variety for exhibition," "well adapted for bedding," and, to crown all, the "gem of the season." Indeed, so numerous are the varieties, so curious in name, and in garb so very rich, pretty, splendid, beautiful, delicate, and dazzling, that we are truly astonished at the assemblage, and wonder whence they have come and whether they are bound. The whence is found in "The Year-Book," but the whither who can tell? and we should never, perhaps, know, only sometimes among new flowers something is not equal to the description, or it may be worthless. I think it will be agreed, without a dissentient, that the number of new flowers raised and sent out every year by the trade in this country, as well as in France, Belgium, Holland, and Germany, is very remarkable. Even the Japanese Chrysanthemums, though the idea of those "Ragged Jacks" ever being of any use was ridiculed upon their introduction, on being subjected to British improvement have been influenced by it, and the "first fruits of a rich harvest" have resulted from Mr. Salter's labours. Many interesting varieties have been raised at the Versailles Nursery, and are there to be seen; some, "D., Deal," says, being like "penny spiders," paper cuttings, or having spots like Orchids, and all curious, which latter I should think they must be if at all like the parents. They will, most probably, supply a gap, but I doubt if the gap will yet be well filled.

It was in 1834 or 1835 that the Chinese Chrysanthemum, at that time a "Ragged Jack," was subjected to British improvement, and many fine varieties were raised at Oxford and at other places in England, and in the Channel Islands, especially Guernsey, and we have seen this once starry flower brought to a state of great perfection by the persevering skill and industry of the hybridiser, whilst the splendid specimens seen at our winter exhibitions, show the improvement not to be confined to the raising of new varieties, but to be equally manifested in the art of culture. The consequence of this improvement, not only with the Chrysanthemum but with other plants as well, is a demand for new plants, which is met in two ways:—First, by importations from the Continent; and secondly, by the vast number of hybrids and cross-breeds raised by nurserymen, amateurs, and gardeners in this country, as well as by our neighbours on the Continent.

From the date of the establishment of flower shows this demand has gone on increasing, and developed such extensive ramifications that many think it would be well if all new varieties were subjected to a strict scrutiny before being sent out, thus saving money, time, labour, means, and disappointment. This, however, would not prove of any great avail in stopping the rage for new flowers. The new and rare is the prize most coveted, and, no doubt, is a most lucrative business to those most intimately connected with it. So long as the fashion is all for new plants, so long will all lovers of gardening seek to possess themselves of something more rare and beautiful than their neighbours. Thus flower shows by exciting in gardeners, professional and amateur, a spirit of emulation, have done much towards improving the science of floriculture.

Now, without wishing in the slightest degree to discourage or diminish the prevailing and increasing taste for flowers (for their care is a great source of health and enjoyment to many not as yet imbued with the same ardent taste for shrubs as they have for flowers, because a like spirit of emulation has not been provoked by the metropolitan, still less by the provincial flower shows), I am in the firm belief that the agency so productive of a taste for flowers, would be equally effective in promoting a taste for ornamental and flowering shrubs. I am certain that the offering by the London societies of prizes commensurate with the object, would secure a response worthy of the occasion, and secure a highly instructive and desirable exhibition. There cannot be a doubt, that once a spirit of emulation excited, a taste for shrubs equal to that for flowers would spring up, and spread by the provincial societies throughout the country. Once create a taste, and the demand will increase, and proportionate supplies will be forthcoming. This we know to be a fact, as only last spring Mr. William Paul exhibited a splendid collection in the Royal Horticultural Society's gardens, thereby proving that we have only to encourage a taste and demand for shrubs, and we shall have caterers ample for our wants.

Though the principle of hybridisation or cross-fecundation was known in 1717, in the time of Bradley, yet it was not until the year 1830 and subsequently that any one thought of applying it to produce new and more beautiful varieties of flowers, notwithstanding that through its agency remarkable results with Apple, Pear, and other fruit trees had been obtained by practising it in times prior to 1830. Florists, even, before the establishment of flower shows never thought of cross-fecundation as applicable to the production of new and beautiful varieties of flowers, but by the most extraordinary and unexampled patience were content to wait till in self-coloured varieties some accidental combination of favourable circumstance of soil, climate, and culture induced a "breaking" of colour in the parent, and a variation thus attained was transmitted in a greater or less degree to the progeny.

The march of improvement in flowers dates chiefly from the establishment of flower shows. The attention paid to the raising of fruits bears no comparison to that bestowed upon the raising of new and beautiful plants or flowers; it has for a long time slept as regards the majority of professional and amateur gardeners. Though it may at times have made itself active, yet it is only now beginning to arouse itself from the long sleep it has taken since the days of Knight; but we now have the taste for fruits revived, not to any great extent more than formerly by horticultural societies, but by the introduction of orchard houses, and the greater facilities afforded by cheap glass for proving the seedlings. It is true there has been a great influx of Pears and other fruits, but many are utterly valueless, all our old varieties still holding their ground, and every day becoming more prominent. That we are sadly

deficient or have been much behind our progenitors in the art of raising new fruits, I think the small additions of improved varieties (as compared with flowers), that have been made to the lists until very recently afford abundant testimony. Happily we are commencing what I believe to be quite a new era in fruit culture, having Mr. Rivers's results with Peaches and Nectarines; Mr. Ingram's and Mr. Hussy's with Pears, and numerous others. That we owe much to such men as the raiser of Lady Downe's, the Duchess of Buccleuch, and other Grapes, the raisers of the Victoria Nectarine and the Victoria Pear, we must all admit, but there is room for still greater results. I think we have only to wait a short time ere we have an equal abundance of improved fruits, as we have of improved plants and flowers, of which there is none too many.

It is hardly necessary to point out the small amount of favour shown towards shrubs by the different floral and horticultural societies. There is not a prize for hardy shrubs in any of their schedules: hence the spirit of emulation has not been excited in gardeners, and they have not begun to think of improving the different kinds of shrubs. It rests with the horticultural societies to create a taste for arboriculture, by awakening the attention of those skilled in hybridisation to the great improvements which may be effected in shrubs; and were the same favour accorded to shrubs as to plants, I think, notwithstanding all that might be said against them on account of the ragged and starchy outline of their flowers, the taste for them would spread, and that improvement would be the result.

Prizes might be offered for the best collection of hardy shrubs in flower, for those remarkable for their foliage, and for those producing fruit, according to the time of year, they being in pots of a certain size, for it is desirable that good cultivation and not means should receive encouragement. The majority of shrubs can be grown in 11 or 13-inch pots to a size sufficient to show their characteristics quite as well as if seen in the open ground. It is not necessary to bring a tree in order to exhibit its fruit, hence it would answer quite as well to exhibit a branch to show a tree's foliage, and a branch would serve equally well where the beauty consists in the flowers. Prizes, then, for shrubs in pots and for cut specimens are all that is required to promote a taste for arboriculture, which I would like to be more on a par with floriculture than it now is; indeed, I should like to see every owner or possessor of a garden have a border or shrubbery of choice shrubs, which would be a source of lasting pleasure.

It is not my intention in this communication to treat of subjects that attain the dimensions of a tree, but I shall confine myself to shrubs which usually do not exceed from 10 to 15 feet in height, though they may in a favourable soil and climate attain much larger proportions. They are those that should stand nearest the dwelling, and be of the dwarfer and most beautiful kinds. They should be selected so as to accord with the style of the building, and in planting particular attention should be paid to the shades of green, and the effect that the plants will produce when they are in flower. The effect will be in a great measure produced by the contrast of the shades of green, but if the appearance at the flowering season be not also considered, the effect at that time will not be good. Shrubs having a grey or bluish tint when behind or amongst those of a yellow or bright green hue are thrown into the distance, whilst those with light and small foliage are best planted beyond those whose foliage is broad and fixed. Those with variegated foliage should be employed to relieve the sombre and uniform appearance of evergreens, and those that flower or retain their berries in autumn and winter may be used for a like purpose. Sombre-looking shrubs should lead to the most beautiful or gay, and light coloured foliage should appear among evergreens. The most beautiful shrubs should have the most conspicuous and prominent positions, the shrubbery where it projects being planted with those most distinct and brilliant. The design, though bold, ought to be rendered free of all harshness and abruptness by a judicious arrangement of the colours, blending easily one into another, and not a shrub should be planted that will not add to the effect and harmony of the whole. In planting in regular order and at equal distances it is not desirable to form a shrubbery of recurring varieties; if more than one of a sort be planted, it would be well to group it in one place so as to give effect in various parts by a mass of one colour whether consisting of foliage or bloom.

A shrubbery should not be too much crowded, as the beauty of the plants cannot be displayed when they are planted so closely together as to be drawn up into unnatural shapes.

Attention should be paid to height, for it is destructive of effect as well as to the plants' growth to place the tallest next the walk or nearest the eye, and the dwarfiest at the back or behind them; but much may be done towards giving an undulating appearance by planting the tall shrubs together in clumps, and the dwarf ones as well, proceeding gradually from the lowest to the highest shrubs, and again from the highest to the lowest. It is desirable in planting to bear in mind that effect does not depend on the rarity of the plants, but on a selection of those succeeding each other in their blossoming or the ripening of their various-coloured fruits, which latter add materially to their beauty when the flowering is over.—G. ABBEY.

(To be continued.)

ROYAL HORTICULTURAL SOCIETY'S EXAMINATIONS.

THE result of the last examination of gardeners for certificates, held at the Royal Horticultural Society, South Kensington, on the 17th of December, is as follows:—

		Vegetable and Fruit Culture.		Floriculture.	
W. Spinks.....	Chiswick Students.	First Class	First Class	First Class	First Class
B. Wynne		ditto	ditto	ditto	ditto
F. Hardesty		Extra Second Class	Second Class	Extra Second Class	Second Class
W. Steward		Second Class	ditto	Second Class	ditto
J. McArdle		ditto	ditto	ditto	ditto
F. W. Burbridge	Kew.....	Extra Second Class	First Class	Extra Second Class	First Class
M. Middleton		Third Class	Second Class	Third Class	Second Class
R. Inglis		ditto	ditto	ditto	ditto
A. Stormont		Extra Second Class	Second Class	Extra Second Class	Second Class
E. L. Keenan		ditto	First Class	ditto	First Class
J. J. Bull	Regent's Park	ditto	ditto	ditto	ditto
J. H. Hart	Benham Park	Third Class	ditto	Third Class	ditto
C. Roberts	Eridge Castle	Second Class	ditto	Second Class	ditto
A. Bradley	Court Yard, Eltham	Extra Second Class	ditto	Extra Second Class	ditto
J. Williamson	Battersea Park	ditto	Second Class	ditto	Second Class

GALVANISED WIRE TRELLISES.

THE trellis of Mr. Williams, of Woodland, that I wrote of showed no sign of wearing, neither was there any sign of canker or gum. If Peach and Nectarine trees are tied tightly to wires or nails, they will throw out gum or canker. Two inches from the wall is too far for a wire trellis. Peaches and Nectarines do not like draughts of air behind them. I tie all my Peach trees with bast instead of shreds, which harbour pests. The plan is inexpensive, and neater than shreds. I use cast-iron nails; and instead of drawing them and leaving holes I break them off. They are very cheap.—W. F. RADCLIFFE.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE first meeting for the present year was held at Burlington House on the 6th of January, Sir John Lubbock, Bart., F.R.S., President of the Society, being in the chair.

Amongst the donations received since the last meeting were the "Proceedings" of the Essex Institute of Natural History held at Salem, United States; the Ferdinandeum Institution of the Tyrol; the Netherlands and Moscow Societies; the Linnean Society of London, &c.

The Rev. Douglas Timmins exhibited three interesting varieties of the Queen of Spain Fritillary Butterfly, *Argynnis Lathonia*, in two of which the wings were of abnormal form and size, and in the third the black markings were greatly suffused; also a specimen of the magnificent *Charaxes Jaisius* reared in England. Mr. F. Smith exhibited several specimens of a large species of Wasp belonging to the exotic genus *Polistes* (and closely allied to *P. biguttatus* and *versicolor*, natives of Brazil and the West Indies), of which five individuals had been taken alive in the course of the summers of 1866 and 1867 at Penzance, by Miss Carne, in the window of the same house. Mr. Smith was unable to conjecture how such insects could have been introduced into this country.

A note was read from Mr. Colville as to the geographical locality of the two species of *Papilio*, *Phorhanta* and *Epiphorbas*, natives of Mauritius and Madagascar. A note was also read from Captain Leudy as to the introduction of the eggs of *Bombyx Atlas* from China, with the view to their being employed in silk culture. A letter from Herr Schickendanz was communicated by Dr. Burmeister from Buenos Ayres, containing a description of a new and remarkable genus of Lamellicorn Beetles in Brazil, belonging to a group hitherto only known as peculiar to the shores of the Mediterranean, its position being between the genera *Macrophylla* and *Pachypus*. It had been captured on the flowers of a leguminous plant, and it was proposed to be named *Burmeisteria mirabilis*.

A report by the Rev. G. Richter, Governor of the Central School at

Koerg in the East Indies, was read on the destruction of Coffee trees by the larvae of a Beetle named the Coffee-tree Borer, and on the means of preventing its ravages. Specimens of the injured wood and insect were forwarded: the latter proves to belong to the family Cerambycidae, and has been described under the name of *Clytus maccaensis*.

The Secretary made some observations on the law of priority in nomenclature as applicable to certain species of Hymenoptera from Australia, of which short descriptions had been printed and circulated by the Rev. F. W. Hope, but which had never been regularly published and sold; the insects having subsequently been described and figured by other authors with other names, which under the circumstances Mr. Dunning considered as entitled to priority over Mr. Hope's names.

Mr. MacLachlan exhibited a very beautiful species of Caddice Fly new to this country, which had been taken at Bishops' Wood, in Staffordshire, by Mr. Chappell, of Manchester. It is the *Neuronia clathrata* of Kolentati.

Mr. Hewitson communicated a critical revision of Mr. Wallace's memoir on the Pierideous Butterflies of the Malayan Archipelago, recently published in the Society's Transactions.

A new part of the Society's Transactions was announced to be ready for delivery to the members.

FLOORS CASTLE.

[THE following notes on this magnificent residence were written by one of our correspondents in the autumn of 1865, and should then have appeared. Public attention, however, has recently again been directed thither by Her Majesty's visit to its noble owner, and also by Mr. Rose, the very able gardener there, being appointed to the management of the Royal Gardens at Frogmore; so we now place before our readers an account of the garden and grounds, and would more especially call attention to the fine range of glass houses, presenting features not often met with, and well worthy of being copied.]

To the tourist from England who enters Scotland for the first time by the East Coast route, the tameness of the scenery at the boundary of the two countries is disappointing, the town of Berwick itself having little to recommend it, while the Tweed, the stream of whose beauty poets have so often sung, seems only to resemble a wide shallow canal, especially when it is low water. The country, too, is more interesting to the farmer and utilitarian than to the lover of Nature, as good farming, large fields, and straight fences, with few or no plantations of any importance, give rather a bleak than a clothed appearance. But follow that river up its course, and then its real character and beauties appear—its clear limpid stream, now expanding itself between meadows of the richest green, now hemmed in between high banks overhung by woods, both natural and artificial, with ever and anon a rock opposing its rugged base to the onward course of the stream, which murmurs at the impediments in its way. The scenery on the banks is likewise ever changing. Now and then is seen a modern mansion replete with all the comforts the wealth of the nineteenth century can command; while, externally, well-dressed grounds, trim fences, and good roads, attest the advance which taste and industry have made; and probably not more than a gunshot from this residence may be described the remains of some feudal fortress, with its keep and ponderous walls, interesting by its historical associations. Farther on a less imposing memento may remind the traveller of an encounter between the people of the countries on the opposite banks of the river, or, perhaps, most interesting of all, he may meet with the remains of some religious edifice, which even in its ruin shows that the skilled artisan of the present day is in many respects inferior to his brother craftsman of some four or five centuries ago, as the adornments among the ruins of Melrose Abbey, for instance, bear witness. Leaving the tourist, however, to journey through a district of such historical and poetical interest, let us retrace our steps a few miles downwards from Melrose, and we find ourselves in the immediate neighbourhood of a residence almost regal in its proportions and remarkable for its beauty.

Floors Castle, the principal seat of the Duke of Roxburgh, is beautifully situated on the left bank of the Tweed, and about a mile from the thriving town of Kelso. The present structure is a castellated building of large dimensions, which was considerably improved and enlarged a few years ago, the original structure having been built from designs by Vanbrugh, soon after the beginning of the last century. The approach from Kelso partly passes through and partly skirts a wood of large and healthy Oaks, Silver Firs, and other trees, ample space being allowed for the carriage road, as well as for its margins. The mansion stands on a gentle eminence, the ground receding

from it towards the south and east, the approach alluded to being from the latter direction. Making a slight *detour* the visitor is carried to the north side of the building, which, as in most other residences of a like character, is made the carriage entrance; but my object being to visit the garden, which is a little to the west of the mansion, I contented myself with a hasty glance at the noble residence. I was astonished at its extreme freshness of colour, the pale freestone looking as if it had not been more than a week out of the quarry, and this circumstance, coupled with the emerald green of the turf, and the healthiness of the vegetation around, would imply a purity of atmosphere and fertility of soil not often met with.

At a convenient distance to the west of the mansion is the new kitchen garden with its various appurtenances. Some fine timber trees, interspersed with shrubs, form a sort of link between it and what may be called dressed ground. There is also a very extensive area on the north side of the mansion, and a much larger space on the south and south-eastern sides; in fact, the extent of what may truly be called lawn would appal any one not conversant with mowing machines, for apparently every inch of the space seemed excellent grazing land, capable of producing any number of good crops without diminution from the dry weather, which in the south of England is sometimes such a drawback; but here winter only would seem to cause any cessation of growth. Leaving this beautiful scene, a very few minutes' walk brings us in sight of a garden wall, and the first look confirmed what I was led to expect from preceding objects—that the kitchen garden and all its appurtenances are entirely new. I now made the acquaintance of Mr. Rose, the highly intelligent gardener, a difficulty easily overcome where courtesy and hospitality are so abundantly exercised as it is by him.

A cursory survey enables us to see a kitchen garden of four acres or more in extent, of a long rectangular shape, and surrounded by high walls, on each side of which are planted suitable trees; while the southern side of the south wall is covered, or partly covered with glass. Some intermediate ground, partly dressed, unites this part of the garden with a wood a short distance still farther to the south, but too remote to do any harm by its shade. Mr. Rose's cottage, situated at the north-eastern corner of the garden wall, is well placed, so as to look into the kitchen garden, a new flower garden, and an extensive range of forcing and plant houses, as shown in the plan, and of which the top is the north side.

The kitchen garden, with its slip on the south side, forms the western portion of what may be called the gardener's domain, his cottage being at the north-east corner. Separated from the north garden wall by a convenient space is the range of glass structures referred to, the house at the back, No. 8, being about on the same line as the north garden wall, and the other houses all at right angles to this. Some trees shelter the whole, as well as conceal the heating apparatus and various back buildings. These glass structures are all span-roofed, and excepting the back of the long one, No. 8, which is a blank wall, all the sides of the others, as well as the front of the long house, are glass almost to the ground; and being all of a size in both length, width, and height, they unite to each other and form a noble and attractive whole. From what few observations I was able to make, it would appear that a multiple of 20 is the ruling figure in the arrangement, each house, including the back one, being 20 feet wide; the interval between the houses is also 20 feet, and the length of each 60 feet, making the back one 260 feet long. I am not sure whether the doorways to the long house, No. 8, are enclosed by ornamental porches or not; but I believe they resemble those entering the other houses from the front, each being simply a good-sized door in the centre of the gable, which also exhibits some suitable ornamentation, but not such as to detract from the appearance of the structure as a whole. The lantern at top gives sufficient air at that part, and ventilation is also afforded by openings at the sides. The houses are heated by hot water, and from the number of pipes in each house the heating, no doubt, is very effective.

A broad path passes through the centre of each of the houses numbered from 1 to 7, and communicates with the back house; and to support the roof, a series of cast-iron pillars, arched at top, and united by braces to the rafters, as shown in the accompanying section, give both strength to the building and beauty to the interior, for they form a sort of archway on which Vines or climbers are trained, and as they are only underneath alternate rafters, they are not too numerous to be in the way. I am not



certain whether this arrangement existed in the back house or not, as the pathway there is of a serpentine character, but so arranged that the curves approach the south side at each place where a door enters into one of the other houses. This pathway is upwards of 4 feet wide. The house is planted entirely with hardwooded plants of large size, as Camellias, Acacias, Azaleas, and New Holland plants of an ornamental character, the back wall and roof being covered with climbers, and the whole in the most excellent health, forming a shrubbery which at no distant day threatens to block up the path; but judicious pruning will, no doubt, keep it in order for very many years. The extent of this house, 260 feet in length, by 20 feet wide, will enable the reader to judge there was ample space for a great variety of plants, and the serpentine form of the pathway brought the visitor in presence of a fresh set of plants at every turn, which would not have been the case had the path been as straight as in some corridors leading to conservatories or other objects at a distance. The curves are uniform and easy.

The space between each house is just the width of the house itself—i.e., 20 feet. This space constitutes the Vine border, where the houses are devoted to the culture of that fruit or of the Peach, and probably the climbers of the plant houses luxuriate in the like open space. Where Vines are grown they are planted inside, the whole of the floor of the house being also reserved as a border. I am not sure whether any bottom heat was supplied or not, but a drain ran along the centre of each outside border, and rubble stone almost to the top received what superfluous water might fall on the borders. These slightly inclined from each house to the centre, where the drain and rubble stone existed, and I am not sure but shutters were provided to carry all the rain water there. Be this as it may, the excellent condition of the fruit gave unmistakable tokens that the border and all its accompaniments were just such as the Vine delights in, as most excellent fruit were hanging in great abundance in all the houses where the Vines were growing. The Peaches, of course, were over; but the condition of the trees showed that they, too, were in the best possible health and bearing. I regret that the hurried manner I passed through this fine range of houses in order to again reach a train prevented my inquiring into the various details as I otherwise would have done, but Mr. Rose kindly furnished me with the following:—

No. 1 was a plant house devoted to hardwooded plants, many of which were, of course, out of doors at the time of my visit, and their place for the time being was occupied by showy flowering plants suitable for the season.

No. 2, Peach house. Of course the crop here had been gathered some time, but there were plenty of excellent fruit from a glazed Peach wall, forming the southern boundary of the kitchen garden.

No. 3, Muscat house. Excellent fruit of several varieties. Mr. Rose was trying some experiments on stocks. His

opinion that the Muscat of Alexandria would always retain as high if not the very highest place in collections of Muscats, seems to be generally confirmed by that of other growers.

No. 4, Plant stove. There were some good specimens of plants of various kinds, including Marantas, Crotons, Aloegasias, and Allamandas, all in good health and well arranged for effect.

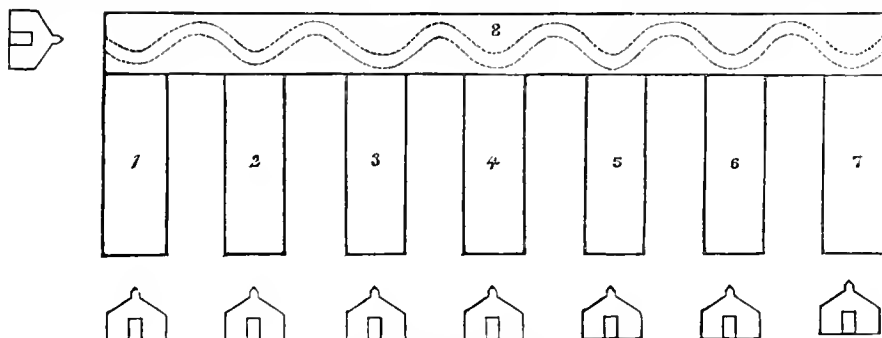
No. 5, Vinery. The Vines were mostly Hamburgs, of which there was a considerable variety, all in excellent order, and I noticed the Black Muscat of Alexandria, or Muscat of Hamburg, as it is commonly called, in better condition than we had ever before seen it. A white Grape, called Catawba, was also a favourite with Mr. Rose; but I regret not remembering precisely its features. Calabrian Raisin was in promising condition to ornament a dessert at Christmas.

No. 6, was a late vinery. Here Mr. Rose had Lady Downe's, West's St. Peter's, and Alicante in excellent order, and one or two others on trial; but he considered that a very good supply might be had by growing only three or four kinds—namely, Black Hamburg, Muscat of Alexandria, Lady Downe's, and another. He was of opinion that each variety should have a house to itself, and considered that none more wanted this than Lady Downe's. The Vines in all these houses were young. All were bearing full and heavy crops, and were healthy, luxuriant, and without the least appearance of red spider or any disease. The house, having a span roof of such an extent covered with fruit, had a very fine effect.

No. 7. This, like No. 1, was a plant house, but for the soft-wooded plants. It was well filled at the time of my visit with plants in flower, for the great bulk of the Chinese Primulas, Cinerarias, and Pelargoniums were in cold pits elsewhere.

Having roughly and imperfectly described these houses and their contents, I should remark that a broad terrace walk 16 or 18 feet wide passes along the front of them, the doors in the ornamental gable end of each house opening upon this walk. To the south of this walk is a geometrical flower garden on grass. The panel containing the flower beds is somewhat longer than the front of these houses, 260 feet, by gaining some feet at each end. This panel, a square, or nearly so, is sunk on three sides, so that the terrace walk commands a good view of the flower beds; and as the extent affords ample space between each bed, their contents were seen to every advantage. I need hardly add that the beds were all planted with the choicest plants used for such purposes, and that the only failure, or partial failure, was in a Verbena of that intermediate class related to Velvet Cushion which only succeeds well in a few places.

The terrace walk just mentioned unites with others, carrying the visitor forward to the mansion. Groups of choice shrubs were judiciously planted by the way, and these and the rich verdure of the turf, as well as of the timber trees left in groups here and there, promised that the present appearance of new or rather extended grounds, will not be of long



Plant and Fruit Houses at Floors Castle.

duration. As it is, there is no lack of anything to give importance to a place that is connected with so many historical associations. The ruins of Roxburghe Castle are but a short distance from the front of the mansion, and in the park be-

tween the two, a Holly bush is said to mark the spot where James II. of Scotland was killed by the bursting of a cannon. A little higher up the Tweed, the Eildon Hills, are seen peeping over the trees.

NOTES AND GLEANINGS.

At the Royal Horticultural Society's meeting on the 18th inst., there is to be a ballot for twenty-five lots of plants.

These consist of seedling hybrid Caladiums, Peperomia marmorata, Bertolonia guttata, Cissus porphyrophyllus, and several

other stove plants with ornamental foliage; *Camellia reticulata*, *Lilium auratum*, a few other choice greenhouse and hardy plants, together with *Berberis stenophylla*, a hybrid shrub with very ornamental rich apricot-coloured flowers; and of Conifers, *Thuja compacta*, *Thujaopsis borealis glauca*, and *Retinospora pyramidalis*. Fellows intending to take their chance in the ballot should send in the numbers of the lots they may select, on or before Tuesday, the 11th inst., which, we may remark, is also the day of the Annual General Meeting.

— THE Challenge Medal of £20 in money at the option of the winner, offered by Mr. James Bateman, F.R.S., to the exhibitor gaining the greatest number of marks for Orchids at the meetings of the Royal Horticultural Society during 1866-67, has been won by Mr. James Anderson, gardener to T. Dawson, Esq., of Meadow Bank, Uddingstone, by a large majority of marks.

WORK FOR THE WEEK.

KITCHEN GARDEN.

ATTEND to the due preparation of ground for crops in general, but beware of carrying on any operations while the soil is wet; better be a fortnight too late with any given crop. Where kitchen gardens are composed of light sandy soil they are better dug or trenched some weeks before the ground is wanted for certain crops, especially Broad Beans, which like a firm hold of the ground. *Cauliflowers*, have hand-glasses ready for the plants in pots; enrich the stations very much, adding fresh loam if it is at hand. Under each hand-glass turn out four strong plants from the pots, one in each angle, soaking well with liquid manure previously. *Cucumbers*, as there are many amateurs and gardeners who have not the advantage of a pit for growing their Cucumbers, the following way of forming a bed may be new to some, and will be found much better than making one wholly of dung, as it will not sink so much, nor take so strong a hue to keep up the heat. Mark off on the ground a space 1 foot longer and wider than the frame, next build up to this size with faggots of stent brushwood to the height of 2 feet, then lay a row of faggots 18 inches in diameter along the back, front, and ends for the frame to rest upon, placing them close and firm, leaving the interior space to be filled up with fermented dung and leaves as a foundation for the soil. *Horseradish*, plant if not already done, dibble it in in rich light soil from 1 foot to 15 inches deep. *Sea-kale*, let this and *Rhubarb* intended for next year's forcing be planted immediately in rich trenched ground; throw up a hillock of old tan, ashes, or sand around each crown to coax it on through the vicissitudes of the weather during this month and March. Thoroughly drain any portion of the garden which exhibits the least appearance of requiring such an operation. Where water is apt to stand on the surface through the puddling properties of heavy soils, try to improve the texture by a dressing of sand, ashes, lime rubbish, charcoal dust, &c.

FRUIT GARDEN.

Finish all pruning in this department without delay. Gooseberries, Currants, Filberts, and all standard fruit trees ought to be kept clear in the centre, so as to have a full surface exposed to light inside as well as outside.

FLOWER GARDEN.

As before observed, see that all planting is completed forthwith. Improve as much as possible outlines of every kind. Plant fresh masses or groups where necessary, and introduce specimen plants where fitting opportunities offer. Much mischief is done by planting single specimens in recesses. These should be carefully preserved as a general rule, to give deep shadows and to throw the prominent features into bold relief. If frosty weather should set in every available means must be adopted to protect Tulips and Auriculas. At this season mice are apt to be very mischievous amongst Polyanthus when kept in frames by eating the hearts of the plants; they must, therefore, be trapped. When the weather is sufficiently fine lose no time in planting Ranunculuses. These beautiful flowers delight in a cool subsoil. Seed may now be sown in pans or boxes; the compost of decayed leaves and sand having been well watered the night before the seed may be scattered rather thickly, pressing it gently on the surface; cover very slightly. If a proper quantity of compost is not prepared lose no time in mixing it, at the same time keeping a vigilant watch for all injurious insects. It will soon be time to place Carnations and Picotees in their blooming pots. Plant out biennials in masses where requisite. In borders the re-arrange-

ment of perennials had better stand over until the latter begin to bud in March. A calculation should now or soon be made as to how far the inmates of cold frames will supply the demands to be made upon them. Damp, no doubt, will be found to have reduced the number of some kinds. Strong plants, or store plants, of Verbenas, Fuchsias, Petunias, Heliotropes, Salvias, and Calceolarias, which had become well established in the autumn, should be removed forthwith to some of the houses or pits at work. These will quickly furnish abundance of early cuttings, which should be slipped off and propagated.

GREENHOUSE AND CONSERVATORY.

As the season advances give more air to these houses. See that suitable composts are ready under cover for potting and sowing seeds. Some of the hardwooded plants may now be propagated by cuttings where a gentle bottom heat can be kept up. As charcoal is now allowed by all to be of use to plants, endeavour to have a supply of it at hand for mixing with the soil before the potting season arrives. The early-forced bulbs will now be out of bloom in the conservatory, and should be removed to some sheltered place, from which frost is excluded, in order to ripen their foliage, and other plants may be introduced from the forcing pit. *Bibiscus*, *Clerodendrons*, *Justicias*, and other half-stove plants which flower in the conservatory may be pruned, and some of them placed in a higher temperature, but they should not be potted until they begin to grow freely. A few *Neriums* and *Hydrangeas* may be forced into early growth for this house. A gentle heat would now benefit the Chinese *Azaleas* for early flowering. Continue to give as much air to the greenhouse daily as the state of the weather will admit of, and see that all the plants are watered regularly. The great point is to keep these plants from growing early.

STOVE.

Many of the Orchids that have been kept dry during the winter should now be prepared for a fresh growth, by picking out as much of the dry materials in which they have been growing last year as can safely be done without injuring their roots. All decayed roots should be cut back to where they are fresh. Let the dry pieces of peat be well saturated before you add fresh. The following stove plants will flower freely in a temperature of 45°:—*Poinsettia pulcherrima*, *Aphelandra cristata*, *Justicia speciosa* and *coccinea*, *Eranthemum pulchellum*, *Begonia octopetala*, *Phajus grandifolius*, *Euphorbia jacquiniiflora*, *Echeveria gibbiflora*, *Gesnera elongata* and *lateritia*, *Pancratium amenum*, and *Ardisia crenulata* (for the berries).

FORCING PIT.

Continue to introduce fresh supplies of plants as the former ones are removed to the conservatory; also other plants from which you wish to obtain an early crop of cuttings. Common plants that do not promise much bloom should be at once discarded to make room for others. Failures of this nature always occur more or less in early forcing.

PITS AND FRAMES.

Here, if the number of plants required for bedding-out is considerable, there will be plenty of employment for all hands. The whole of the autumn-propagated plants must be potted-off without delay, so as to have them well rooted and turned out into temporary pits by the 1st of April, in order to set the pots at liberty for a second lot of plants, which should now be coming forward in the propagating frames. Sweet Peas, if wanted to bloom early, must now be sown in pots, in heat, for transplanting.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN AND FRUIT DEPARTMENTS.

THE weather being stormy, potted *Cucumber* plants in a dung frame, carrying them covered up in a basket into a warm shed and back again, and used water at a temperature of about 100°, in addition to warmed soil, so as to give them as slight a check as possible. A chill or a check now will often affect the plants for the season. These are more easily managed in places heated by hot water; and where the work can be done inside of a house, or in a pit large enough to work in, such care is not required, but we often raise the spring plants in a small hotbed, as we could not afford enough of heat to a hot-water pit without giving more heat to other places than we want, and we therefore would have to use more fuel than absolutely necessary, but which would be all very well when the place was

filled with large plants of Cucumbers. In their young state, a good many can be kept in a dung frame until they have attained a fair size; and though we have not a word to say against hot water, still we think that young Cucumber and Melon plants come more robust and healthy in a dung-bed frame. Of course, there is the sweet heat to be secured, and steams and damps to be avoided; but then there is no firing to be given, and somehow there is that in the heat of dung and leaves when perfectly sweet that no other heat can give so efficiently. The best way for securing plenty of sweet top heat is to have the outside of the frame well banked-up, so as to make the sides of the frame conductors of heat. Wood is, no doubt, a bad conductor, but still when a warm substance is long enough against it, it will conduct in time, and continue to do so, so long as the heat remains in the banked-up material. To secure this in front, means should be taken to throw the rain off that falls on the glass, otherwise that will go down by the sides of the frame and even penetrate into the bed. For want of a better, two slips of wood fastened together at an angle, make a tolerable spout for taking away the moisture that falls on the glass.

In the Peach house as the blossoms opened, and as the wind was too boisterous to give any but the least air, the fire was allowed to go out during the day, and a broad piece of wood with a handle to it was waved over the trees in sunshine. In quiet weather, when plenty of air could be given, this would be less necessary.

Propagating Beds.—Many inquiries have been made as to the best mode of securing these in small places by means of dry or moist heat, and very minute answers have been given. For small places and especially a living room, nothing can be simpler than a glass-covered case with a double bottom, the upper one of plate iron, or other conducting substance, and a space of 2 or 3 inches between the two bottoms for holding water to be put in hot and partially or wholly removed when cold. After some observation and experience we have come to the conclusion, that as a covering to such upper floor, whether on a large or a small scale, nothing on the whole is better than sand. That will conduct the heat slowly and always be clean, and when once heated it will keep the heat a considerable time. Cocoa-nut refuse, especially when dry, is a first-rate non-conductor. All coverings over a heated bottom diffuse their heat best when the covering is moist. In such a propagating case the atmosphere of the case can always be kept moist enough if the sand on which the pots stand or are plunged in is kept damp. If the atmosphere is apt to become too damp the sand should be allowed to become drier, and more air should be given when there is no sun, as when the sun shines the case must be kept rather close. When the upper floor of such a case is perfectly close—air and watertight—then the owners should recollect that the heat given off will be dry heat, unless modified by a damp covering. Some people talk of the moist heat from hot water; but if the hot water is enclosed in an air-tight vessel from which no moisture can exude, then the heat given off will be just as dry as if it came from a stove or a flue. The heat will be purer, because freer from those exhalations that, if it is not very well attended to, will proceed from a stove or flue, but as respects dryness there will be no difference, as the degree of heat is the same.

In a case with a close upper bottom, or a bed over a tank or chamber similarly closely covered, a moist heat can always be secured by allowing the bottom to be moist; a dry heat by letting it be comparatively dry. Under such circumstances another simple mode may also be adopted. In the close covering have some holes left, to be covered with upright tubes, as small round drain tiles, furnished with plugs at the upper end. These pipes will give a dry heat to the atmosphere of the place when wanted, and wholly or partially opening the plugs will allow moist heat to escape just in the proportion in which it is wanted. Almost all cuttings, except very succulent ones, like a moist atmosphere, as the moisture in the shape of vapour prevents the evaporation of the juices of the cutting—in fact, keeps the cutting from feeling much its severance from the mother plant, by forcing it to absorb, as well as perspire. When the cutting becomes rooted and a plant, there is a danger of its damping-off from an excess of moisture.

When a propagating pit, or case, is heated by a flue, with a rough chamber over it, or the bottom heat is secured by hot-water pipes and a shallow bed of rubble over the pipes, the rubble making a kind of rough chamber, it will often happen that the obtaining suitable heat from these bottom pipes will depend on the air about them not being close or sealed-up, as it were, from the outer air, and also on that air not being

kept dry. An upright pipe at back and front of the pit—say in each light, with its lower end among the lower rubble, and upper end in the atmosphere of the pit, and to be open and shut at pleasure, will, by pouring water down when necessary, always secure bottom heat, and moist heat in the atmosphere of the place when requisite.

Many of our readers, however, will have none of these conveniences, but will want to increase their stock of Pelargoniums, Verbenas, &c., by means of a common dung bed, and to make the most of but little dung too. Where dung and leaves are abundant we need not say anything, as there will be most likely time and opportunity for sweetening it properly before using it, and there will be no difficulty in putting up a sweet bed of from 2 to 3 feet in height, for to do much at this early period the bed ought to be 2 feet in height; and to secure plenty of top heat the frame should be banked round, and if there is not enough of material for that, it should be neatly covered a couple of inches thick with straw tied firmly against the boards.

Where the material is scanty we would not work or sweeten it too much, if there were either tree leaves or the material of an old hotbed to place on the surface, to take the heat from the fresh material, and keep all noxious steam down. This plan is peculiarly applicable to beds for cuttings and seeds sown in pots, as by moving the pots, which will be a work of necessity, we can stir up the bed afresh at any time. Perhaps we shall make the matter plainer by two instances in which specific directions have been required.

A has three small cartloads of stable litter, very strawy and rather dry, and two fair loads of tree leaves collected from different places, a considerable quantity of bits of dry grass along with them, and he wants to know how to make the most of them for his bed as quickly as possible, and with as little reduction of material as possible. Well, then, first pile the tree leaves in a heap, and cover over with a few inches of the long litter, and they will soon heat well. Then take the stable litter and mix it into another heap, making the droppings go as equally through it as possible, and water well as you go, so that every bit of the straw shall be damp. Make the heap tolerably firm, and just cover it with a slight casing of the dry litter. In mild weather this will heat well in a week. In eight days, if the heap is tolerably uniform as to moisture and heat, we would use it directly; if not, we would move the outside covering and turn the heap, moving the top to the bottom and the outsides to the centre, cover again, and leave it for the best part of a week, letting the leaves alone. In either case we would make the bed with as little delay as possible; and as the material is scarce we would merely make the bed a foot or so larger each way than the frame, protecting it and the sides afterwards as adverted to above. Then we would thus proceed: take all the litter from the outside of the dung heap and the outside of the leaves, and with that make the bottom of the bed; then on that build all the dung, shaking it out well but quickly, so as not to let more heat escape than can be prevented; and on that we would place the leaves in a similar manner, keeping them all by themselves, and if some dry ashes or sawdust were placed over them there would be an excellent propagating bed.

B has rather more dung, but has no leaves, yet he has the remains of a summer hotbed, which has a good piece of material about half rotten in the centre, after all the rotten part round the sides has been set apart for growing some fine Celery. In this case, save carefully all the half-rotten material, and after shaking it well pile it into a heap the same as the leaves, and it will heat mildly, and will make a first-rate covering when the dung is used, as in the case of A. When there are two small frames much work may be done with but little material, as then there is no occasion to make the beds large, and the one would succeed the other, and the first could easily be renovated by taking off the surface covering, turning the material below, and adding a barrowload or two to a light, and replacing the surface material again. We often do this with a two-light box, renovating merely one light at a time, and for such beds it is astonishing what a barrowload of fresh warm dung will do when mixed with what was at the bottom before. Nothing more than the leaves would be required for covering, if sure that they were free from slugs and fungus; therefore, a little ashes and powdered lime may be necessary. If sawdust is used, the bottoms of the pots should not stand on it, or in it, for reasons several times given.

We have only room now for a few remarks on sowing seeds and on the management of cuttings.

1. For small seeds sown on the surface, dust with sand, cover the pot with a square of glass, and keep it dark until the seedlings appear.

2. For most seeds, have the pots within 9 to 12 inches of the glass. Every seedling is a perfect plant, and, therefore, should have all the light possible to make it sturdy and strong.

3. To secure economy of management, we prefer now to have cuttings from 15 to 20 inches from the glass. At that distance they will scarcely need shading—a matter of importance, as the more shaded cuttings are, the more they will lengthen upwards without making roots downwards. Diffused light is very different from shaded light. The first will not draw cuttings, the latter will. The first, therefore, until roots are formed will promote robustness, the latter will produce weakness.—R. F.

COVENT GARDEN MARKET.—FEBRUARY 5.

SUPPLIES here have somewhat diminished, and a rather better demand seems springing up. Good English Pears are becoming scarce, and fine French ones command a high price. They comprise *Ester Beaure*, *Beurre de Rance*, and *No Plus Menris*. Forced produce is much improved, and the supply of French salading is excellent.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples 1/4 sieve	2	6	4	0	Melons..... each	2	0	3	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges 100	3	0	7	0
Chestnuts bush.	8	0	14	0	Peaches doz.	0	0	0	0
Currents 1/4 sieve	0	0	0	0	Pears (dessert) .. doz.	2	0	4	0
Black doz.	0	0	0	0	Pine Apples lb.	4	0	6	0
Figs doz.	0	0	0	0	Plums 1/4 sieve	0	0	0	0
Filberts lb.	1	0	0	0	Quinces doz.	0	0	0	0
Cobs lb.	1	0	0	0	Raspberries lb.	0	0	0	0
Gooseberries quart	0	0	0	0	Strawberries lb.	0	0	0	0
Grapes, Hothouse. lb.	7	0	10	0	Walnuts bush.	10	0	10	0
Lemons 100	8	0	12	0	do per 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	0	0	0	0	Leeks bunch	0	3	0	0
Asparagus 100	7	0	20	0	Lettuce per score	1	0	1	6
Beans, Kidney 100	0	0	3	0	Mushrooms pottle	1	0	2	0
Beet, Red doz.	2	0	3	0	Must. & Cress, punnet	0	2	0	0
Broccoli bundle	0	6	1	6	Onions per bushel	3	0	5	0
Brus. Sprouts 1/4 sieve	2	0	2	6	Parsley per sieve	4	0	5	6
Cabbage doz.	1	4	2	0	Parsnips doz.	0	9	1	0
Capsicums 100	0	0	0	0	Potatoes bushel	4	6	5	6
Carrots bunch	0	6	0	8	Kidney do.	4	0	6	6
Cauliflower doz.	3	0	6	0	Radishes doz. bunches	1	0	1	0
Celery bundle	1	6	2	0	Rhubarb bundle	0	9	1	0
Cucumbers each	2	0	3	0	Savory doz.	1	0	2	0
Endive doz.	1	0	0	0	Sea-kale basket	2	0	3	0
Fennel bunch	0	3	0	0	Shellots lb.	0	8	0	0
Garlic lb.	0	8	0	0	Spinach bushel	2	0	4	0
Herbs bunch	0	3	0	0	Tomatoes per doz.	0	0	0	0
Horseradish bundle	2	6	4	0	Turnips bunch	0	4	0	6

TRADE CATALOGUES RECEIVED.

Barr & Sugden, 12, King Street, Covent Garden, London, W.C.—*Descriptive Priced List of Choice Seeds for Flower and Kitchen Garden. Illustrated Sheet of Elegancies, with List of Garden Requisites.*

Richard Dean, Ealing, London, W.—*Catalogue of Vegetable, Farm, and Flower Seeds. Catalogue of New and Choice Vegetable and Flower Seeds.*

TO CORRESPONDENTS.

.. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix upon the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

GARDENERS' EXAMINATIONS (J. G.).—The Royal Horticultural Society have two—viz., one at Midsummer, the other in December. Of the precise dates due notice will be given.

BOOKS (Hortus).—London's "Hortus Britannicus" with its supplements gives the particulars you require, and the "Gardeners' Year Book" publishes annually descriptive lists of the new plants, &c., introduced during the previous year. Appleby's *Orchid Manual* you can have free by post from our office if you enclose thirty-two postage stamps with your address.

(H. C.).—The report can be had, we believe, of Mr. C. Le Fenve, Bookseller, 18, Bedford Street, Jersey. (*Brought up a Ploughboy*). We should advise your not undertaking too much at once, nor studying more than one subject at a time. "The G. der Manual" contains much valuable information on practical gardening, and it may be had free by post from our office for twenty postage stamps. Also the following works, free by post at the prices named: "Out-door Gardening," 1s. 6d.; "In-door Gardening," 1s. 6d. Having mastered these thoroughly you may add "Science and Practice of Gardening," 2s. 10d., which will furnish you with enough of the theory of gardening. The "Cottage Gardeners' Dictionary," contains the popular and scientific names of plants; that you should have, and when you have mastered it, take Thomson's "Gardener's Assistant." But to become thoroughly proficient you will need books treating of particular subjects; for instance, to be well acquainted with fruit nomenclature you must study such works as the "Fruit Manual," and upon any subject respecting which you require very full particulars, works treating solely on the subject must be procured. You will learn enough of botany and chemistry from "Classical Popular Education."

POTATOES ON CLAYEY SOIL (F. Lane).—Ridge the ground; plant on the top of the ridge during dry weather in March. Plant Hogg's Early Goldstream.

HISTORY OF PLANTS (C. W.).—*Allamanda Schottii* was introduced in 1846 by Messrs. Henderson; it is a native of Brazil. *Chelonanthus Thomsonii*, native of West Coast of tropical Africa, sent thence by the Rev. Mr. Thomson to the Edinburgh Botanic Garden in 1861. *Tournefortia spectabilis*, native of Brazil and Peru, introduced in 1829, and in 1841 it bloomed at Chiswick.

CHINESE PRIMROSES (J. E.).—The flowers were all bruised by the post-office punches.

PATENT (*An old Subscriber*).—Messrs. Newton, Patent Office, Chancery Lane, will send you particulars if you write to them. We warn every one against patenting horticultural articles.

SHREWSBURY'S GAS-HEATING APPARATUS (*A Subscriber, Hall*).—Mr. Shrewsbury's advertisement is in this Journal weekly. His direction is "Wholesale Ironmonger, Lower Norwood, Surrey." You had better tell him what sized house you wish to heat. You must have a tube to carry the fumes from the burnt gas into the outer air.

SALT FOR MANURE (E. E.).—If you put 1 lb. on each square yard you would destroy all vegetation; 1 lb. on ten square yards would be quite enough. Apply it, and dig it in a month before you plant your Potatoes.

HYBRIDISING AND CROSSING (G. H. W.).—We know no work specially devoted to this subject. It is noticed at some length in Johnson's "Science and Practice of Gardening."

COTTON (A. B. L.).—It can be grown in our glass structures of a quality as good as that grown in America. Major Trevel Clarke, Welton Place, near Daventry, has had great success in so cultivating it.

GERANIUM CINNABARINA NOT FLOWERING (J. L.).—As your plants grow well up to the blooming state, your treatment is good; all you require is more heat. They should have a light situation and a temperature of 60° at night and of from 70° to 75° by day at this season, but the temperature will, of course, be somewhat higher with sun and air.

RHODODENDRON BED (*Subscriber*).—You may make and plant a bed of *Rhododendrons* at almost any season, as the plants fit with such good balls. We should prefer doing it before the close of April, and as early after February as we could, in order to save watering. A depth of from 15 to 18 inches of soil is ample.

WALL TREES INFESTED WITH INSECTS (*Brought up a Ploughboy*).—You may wash the wall with lime and soft soap, 8 ozs. of the latter being put in every gallon of brine, and dissolved. The brine may be made by dissolving 2 lbs. salt in every gallon of water used. The solution should be applied to the wall as hot as possible, wetting it thoroughly, using a brush as in whitewashing. From your description we should say your trees are infested with scale, to remove which dress the trees now with train oil, being careful to brush it well into every crevice, and not to dislocate the buds, which it is as well not to paint with the oil, unless they are covered with scale. The insects on the points of the shoots, and which make the leaves curl, and these and the fruit sticky and black, are some species of aphids, which may be destroyed by syringing the trees upon a calm evening with tobacco juice diluted with ten times its volume of water, 2 ozs. of soft soap being dissolved in every gallon of the diluted tobacco water. The trees should be thoroughly wetted in every part, and well syringed two evenings afterwards with clear water. The trees ought to be frequently syringed with water during the insect attacks. It may be necessary to repeat the syringing with the tobacco and soft soap solution. We cannot state the cost of dressing a wall and trees with the above.

CENTAUREA CANDIDISSIMA FROM SEED (C. M. C.).—*Centaura argentea* and *C. candidissima* are the same. It is the best white-foliaged bedding plant, and will do well to mix with *Scarlet Pelargoniums*. Plants from seed sown now in a hotbed and kept in heat until May, will, when well hardened-off, be of fine size to plant out in June. The best way of preventing plants damping-off in a heated pit is to take care that there is no leakage or drip from the lights, to give no water beyond what is necessary to keep the plants healthy, and to give abundance of air on all favourable occasions, a gentle fire being employed even in mild periods to dry up damp and promote a circulation of air. You cannot give too much air if you only exclude frost.

KEEPING SCIONS FOR GRAFTING (M. S.).—You may keep them with their ends thrust in clay and half covered with soil in a north border. Grafting wax is better than grafting clay, but the former is much more troublesome and expensive. Grafting clay should have some cow dung mixed with it, which keeps it from cracking.

PLANTS NOT THRIVING (*Subscriber*).—It is very likely you are being giving your plants too much heat. Bedding plants do not require more heat than is necessary to keep out frost; from 49° to 47° from fire heat is quite warm enough. Another essential is air. You cannot afford too much ventilation, only do not give air when the external temperature is at or below 32°. Water but sparingly in winter, no more being given than is sufficient to keep them slowly growing. Perhaps you give little drops and often; that is bad. Let the soil become dry before watering, then give enough to show itself at the drainage, or come through the bottom of the pot; but do not let the plant flag for want of water before

giving any. You may water the plants overhead after this on fine days; but give air, of which we think you do not afford enough, and employ no more fire heat than is necessary to keep out frost and dry up damp. You would have done great wrong to have had a vessel with water upon the fire in winter. The great danger to hedging plants in winter is damp, and you may keep the atmosphere damp enough by sprinkling the floors and walls with water once or twice a-day, which, along with syringing the plants once a-day, will secure sufficient moisture.

EARLY AND SECOND EARLY POTATOES (Bissettan).—Your Holbury Kidneys are no doubt worn out from the continuing to grow them on the same kind of soil for so long a period as a quarter of a century. We should advise a change of sort. Rivers's Royal Ashleaf is an excellent early sort, and Lapstone will suit you as a second early. Your sprouting the early Potatoes is correct. If you have them with sprouts from one-half to three-quarters of an inch long, planting may be deferred until the middle or end of March for the early ones, and the last week in March or first week in April for the second early.

FORMING A QUICKSET HEDGE (Idem).—In order to make a good hedge, close from the bottom, the quicks should be cut down—if strong, the same season as planted; but if planted in autumn it is well not to do so at that time, but in spring. If the quicks are small they should be allowed to grow one year, and then be cut down to within 3 inches of the ground.

PEAT (A Subscriber).—The peat of which you enclosed a sample is too dark and soft for Camellias and Azaleas. Such peat is liable to become a close muddy mass, and is not desirable on that account for plants requiring frequent supplies of water. By adding one-fourth sandstone in pieces from the size of a pea up to that of a walnut, using the fine as well as the rougher particles, you may make the soil more open, which is all you have to do with the compost, and then the peat will answer very well. It should be thoroughly mixed with the soil, and a liberal addition of silver sand ought to be used along with it.

ICE-HOUSE MAKING (Ere).—In No. 318 of THE JOURNAL OF HORTICULTURE, published on the 28th of November, there is a sketch of and full directions for forming a cheap ice house. You can have the number if you enclose four postage stamps with your address.

CHRYSAANTHEMUMS FOR A GREENHOUSE (Idem).—It is not desirable to keep Chrysanthemums from year to year without taking cuttings. They make far too many shoots, and do not grow freely enough to form handsome, well-flowered plants. Fresh cuttings should be put in every year, and the old plants should not be kept beyond the second year without taking cuttings, or putting-off singly the strong suckers; but plants from cuttings are the best.

PLANTS FOR BASKETS IN A GREENHOUSE (Idem).—A dozen good plants for baskets in a greenhouse are: Saxifraga sarmentosa, S. Fortui variegata, Nerveberberia gracilis, Lithospermum fruticosum, Tradescantia zebrina argentea, Lysimachia nummularia, Platycodon alcinone, Adiantum setulosum, Selaginella denticulata, S. coccinea, the Gold and Silver-variegated Ivy-leaved Pelargoniums, and Convolvulus mauritanicus.

BEDDING PLANTS IN A PIT (Man of Kent).—You will be doing well to keep your plants in the pit as cool as you can, taking care to exclude frost. A temperature of from 40° to 45° at night, and of 45° to 50° by day, with air on all favorable occasions, is quite warm enough. Be careful of the watering pot, and do not water oftener than is necessary, as every time you water you must make the pit more or less damp, and that is objectionable at this season. Do not water so long as the plants will continue without flagging; but when the soil becomes very dry give them a good watering, enough to show itself at the drainage. When they commence growing, water should be given more freely, but only when required: the soil should be dry before any is given. The bed for cuttings should be covered with 3 inches of sand or fine soil, and if sand was to be had, a covering 6 inches thick will answer admirably for plunging the pots in. The bed should be covered so as to keep down the rank steam, which will not only injure, but destroy the cuttings. A bottom heat of from 70° to 75°, and a top heat of 65° to 75° are necessary, and the cuttings will bear a higher temperature. The temperature of the bed for the first ten days or a fortnight will range from 70° to 75°, which is not too much. In the day the temperature will, of course, be somewhat higher in consequence of sun heat. The cuttings should be inserted in pots, and the pots plunged in the bed, taking care that it is not so hot as to burn them. The bed will answer for seeds of Stocks, Asters, and half-hardy annuals; but these ought to be sown after the cuttings have struck, as if sown at the same time as the cuttings are put in the frame will be too close for them, and they will become drawn. Whilst the cuttings are striking a little air should be given to prevent an accumulation of damp, otherwise the frame should be kept close and moist, and also shaded from sun, until they have struck. The autumn-struck cuttings will not need to have heat after potting. They should be placed in the pit after potting, and be kept close and shaded for a few days, until they recover. If you can give them gentle heat they will the sooner recover after the potting. In that case they should be well hardened-off and be returned to the pit. Do not keep them in heat.

RAISING VIOLA CORNUTA AND VIOLA LUTEA FROM SEED (Idem).—You may sow the seed of both these very ornamental and neat edging plants early in March in a hotbed, and continue the plants in heat so as to forward them. When large enough to handle they should be pricked-off, about an inch apart, in pots, and be returned to the hotbed, keeping them near the glass, and giving them a moderate amount of air, so as to prevent their becoming drawn. Harden them off well in May. They will be fit to plant out in June, and will bloom in autumn; but for summer-flowering plants from division or cuttings are much better than seedlings, which are not at their best until the second year. They will succeed under the shade of the hedge, but not very close to it, as the soil may in that case be too dry. They require moisture as well as shade—indeed, where the soil is strong and moist, shade is not desirable.

CANNAS (Idem).—The tuberous roots should be potted and placed in a hotbed. You may divide them before potting, and it will be well to have the plants strong and well hardened-off before planting them out, which should not be done before June.

MUSA Coccinea CULTURE (A Dublin Subscriber).—We would advise you to re-pot it, removing most of the old soil, and placing the plant in a pot just sufficiently large to hold the roots without cramping them. The pot should be well drained, and for soil use turf 1½ to 2 inches thick, cut from

a pasture where the soil is a good yellow loam, light rather than heavy. This should be torn in pieces by the hand, and one-third leaf-mould may be mixed with it; likewise one-fourth of dry cow dung, and enough sand to make the compost porous. Plunge the pot in a hotbed of 75° or 80°, keep the atmosphere moist, and maintain a top heat of 60° to 65° at night, and 70° to 75° by day, with an increase of from 10° to 15° on clear days. The plant should have a light situation, and be carefully watered until it is growing freely, when it should be very copiously watered. Weak liquid manure may be given alternately with pure water. Do not water until the soil becomes dry, then give a good supply—enough to come through at the bottom of the pot. When the pot becomes full of roots shift the plant into a larger pot, and continue shifting as the plant increases in size. We would not cut off the stem at the ground, but leave it as it is. If you cut it down, the plant would probably throw up suckers; and if the stem, now 4 feet high, has lost its centre, it will put out suckers. You have been keeping the plant too cool. It is a stove plant, requiring all the light you can give it, and a moderate amount of air. One half the Musas in the country are starved for want of support, and are miserable objects; otherwise they are the most stately and handsome of ornamental-foliaged plants.

PELAGONIUM SEEDLINGS ATTACKED BY INSECTS (Tom Thumb).—We are not aware of any insects such as you describe that eat through the leaves. We should think they are thrips, which will yield to fumigation with tobacco on a calm evening.

CANNAS FOR A SMALL GARDEN (Idem).—Half a dozen with green leaves are—Canna bicolor, C. Sellowii, C. lutea picta, C. Warszewiczii, C. macrophylla, and C. patens Esperen; and of dark-leaved sorts—C. zebrina, C. floribunda, C. rubra perfecta, C. Van Houttei, C. rubriculmis, and C. Warszewiczii Chascl.

APPLYING SOOT (Cornubia).—Soot may be applied with advantage to all descriptions of plants. It may be strewn over ground before digging, be scattered round fruit trees and allowed to wash in, or be spread between the rows of all growing crops, and the stirring of the ground with a hoe will be sufficient working-in. It is best applied in spring. It is an excellent manure for lawns, and should be applied in sufficient quantity to make the surface black. Prior to earthing-up is a good time to apply it. A peck to thirty gallons of water makes a most excellent liquid manure for all growing crops, giving the ground a good soaking once or twice a-week in dry weather.

GAS LIME (Idem).—In preparing ground for fruit trees and vegetables, we should not recommend gas lime unless there was some reason for its application, as the ground being infested with wireworms, and then thirty bushels will be sufficient for an acre. If more be applied the ground will not be fit to plant or sow for six months. We should drain and trench the ground, and if the soil is strong give a dressing of lime at the rate of one hundred bushels per acre, spreading it when fresh slaked and hot over the ground after trenching, and pointing it in with a fork. During dry weather in March is a good time.

MANURE FOR A DRY SOIL (A Reader).—We have had considerable experience of such a soil as yours, light on a gravelly subsoil, and we find the best manure to be cow dung. It is cool and more retentive of moisture than ordinary farmyard or stable dung. You will grow good crops if you enrich the ground well and often, and in dry weather water freely with liquid manure. Do not give a heavy dressing and seldom, but a moderate manuring and with every crop. The most lasting benefit is derived from a good marling, putting on a dressing in autumn so as to cover the ground about an inch thick, and allowing it to become frozen; on a thaw taking place it will fall and may be spread over the ground and dug in. You should plant the Shallots and Garlic during this month, and the earlier the better if the weather be favourable.

PLANTS FOR A VINERY WALL (J. W.).—For planting out—Luculia gratissima, Habrothamnus elegans, Cestrum aurantiacum, Camellia Simbricata, Camellia Monarch, Citrus aurantium (Orange). For pots—Hoya carnosa, Jasminum gracile variegatum, Mandevilla simeolepis, Rhycolispermum jasminoides variegatum, Solysia linearis, and Mutisia decurrens.

POTTING PLANTS IN FRESH LEAF MOULD (J. A.).—Your plants will not suffer from being potted in the fresh leaf mould. It would have been better if the leaf mould had been more decomposed. We would not disturb the plants potted with it. We presume it was thoroughly mixed with the other soil, and in that case you will not have anything to fear from the soil being too open. We think the plants will grow well. Your other plants should have a temperature of 50° at night, be kept nearer the glass, and have a moderate amount of air, being careful not to overwater, although keeping the soil moist. We would not re-pot the Vine, that should have been done in autumn immediately after the leaves had turned yellow. Remove as much of the surface soil as you can without disturbing the roots, and give a top-dressing of an equal quantity of half-inch bones, sheep or horse droppings not very old (three or four months), and turf cut 2 inches thick from an old pasture where the soil is a good rather light loam. The turves may be placed on iron plates over a fire, so as to slightly char them and so destroy the vitality of the grass.

MELONS (Young Gardener).—Three Melons of good size and flavour are Beechwood (Green-fleshed), Malvern Hall (Scarlet-fleshed), and Conqueror of Europe (Green-fleshed).

FRUIT TREES CANKERED (Half-pay).—We should attribute the canker in your fruit trees to the roots being in bad soil. If not old we would recommend their being lifted and planted on the level ground, raising the soil about them in the form of a cone, so as to cover them with 3 inches of soil. The draining of the ground efficiently is your only true remedy.

COPING BOARDS (J. E. B.).—The coping boards are excellent for the protection of the blossoms and young fruit in spring from frost, but they should be removed afterwards, or towards the close of May, as they shut off the rains, and it is not necessary to replace them until the blossoms are expanding. We would not now remove them, but defer it until the end of May. Ammoniacal liquor from the gas works will destroy slugs, and about the trees you name it may be used now with advantage, diluted with six times its bulk of water. A few dressings with fresh lime in the evening after a showery day will soon free a garden of these pests. The best time to apply it is soon after dark, the ground being made white each time.

CENTAUREA RUGOSINA PROPAGATION (D. W.).—The shelf of an early vinery, or the shelf of a Cucumber house heated by hot water, we prefer for cuttings put in now.

POT VINE IN A GROUND VINERY (Rugby).—Your Vine would have done better if planted under your ground vinery in the autumn, and the ground mulched over it. To obtain as much fruit as possible from the Vine this year, we would break holes in the pot, plunge the latter overhead, and place good, fresh, rich soil all round it, to let the roots go out. To do the best for the Vine permanently, but at a loss for this season, turn it out of the pot and spread out the roots. Such a Vine may be raised at the time you name, but we would prefer a young Vine from a cutting now. We would keep the ground vinery over the Vine all the winter.

FORMING A VINE BORDER—VINES FOR A GREENHOUSE (G. W. O.).—You may make the border as wide as the house, or 14 feet, but half the width will do at first if that is an object. With such material, we would to every 2 yards, or two loads of soil, add two bushels of fine rubbish and half a bushel of charcoal and broken bones. In such a house we would plant Vines—namely, 1 Black Hamburgh, 1 Black Muscat of Alexandria, 3 Royal Muscadine, 3 Black Hamburghs, 1 Black Muscat of Alexandria, and 1 Esperione. These will ripen with little fire heat.

DISTANCE OF PLANTS FROM HOT-WATER PIPES (J. D.).—There will be no danger from the hot-water pipes if the shelf is 12 inches from it. Mr. Robert Pettit, of the Botanic Gardens, Bury St. Edmunds, had a fine collection of succulents.

WEIGHT OF A SACK OF POTATOES (J. F.).—In the London markets a sack of Potatoes is required to weigh 168 lbs. Consequently, in answer to your query, it contains 21 stones, of 8 lbs. to the stone.

FLOWER GARDEN PLANTING (Fred).—All we would suggest is more unity and completeness, by edging all your beds instead of part of them. Thus—as 2 is edged with *Lobelia*, we would edge 3 with *Cerastium*, 4 with purple, 5 with lilac, and so on. Without such arrangement there will be a want of completeness.

ARAUCAIA CUNNINGHAMII SINENSIS. —Mr. Thomas Winkworth (see page 91), states that it has withstood the severity of our winters unharmed. He would oblige by stating if it has withstood the severe winters unprotected.—L. X. "Instead of being the tallest of this Conifer at Elmhurst Gardens' is now 6 feet high," as stated at page 91, it should have been "the tallest is now 10 feet high."—THOMAS WINKWORTH.

VINE IN A FERN CASE (K. D.).—It is quite possible to raise the Vine in a Fern case 2 feet high, and 12 or 13 inches wide; but, then, of what use would it be except for foliage? and a more moderate-growing plant would be better. Even for such a case you could not have less than 6 inches of soil—in fact, the Vine would be better kept in a pot. The Royal Muscadine would be as good as any. To do any good with a Vine the case ought to be from 6 to 10 feet in length, and even then we would prefer the Vine to be at one end in a box that would hold at least three-quarters of a bushel of soil, instead of turning it out in the case. Loamy soil is the best.

NAMES OF PLANTS (J. D.).—*Mesembryanthemum gracile* (narrow-leaved); *M. crystallophanes* (broad-leaved). (P. W.).—As the Moss is not in fruit, and I had specimen also, it cannot be named. (W. R. Howell).—1, *Cephalanthus pallens*; 2, *Orchis incarnata*; 3, *O. variegata*; 4, Probably *Orchis latifolia* in a young state.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending February 14th.

DATE.	BAROMETR.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 29	31.321	30.124	47	31	43	40	W.	.00	Clear; partially overcast, fine; slightly overcast.
Thurs. 30	30.231	30.038	50	33	42	40	S.W.	.00	Overcast; fine; densely overcast, brisk wind.
Fri. . 31	29.952	29.643	53	47	41	40	S.W.	.00	Heavy clouds, fine; overcast; overcast and boisterous.
Sat. . 1	29.622	29.287	59	38	46	42	W.	.00	Overcast, exceedingly tempestuous; fine, very boisterous; clear.
Sun. . 2	29.903	29.521	53	41	45	42	N.W.	.26	Clear and fine; very fine; heavy rain, brisk wind. [brisk wind.
Mon. . 3	30.202	29.765	49	26	45	42	W.	.00	Fine but cold; fine, heavy clouds; clear at night.
Tues. . 4	30.330	30.304	49	32	43	42	W.	.00	Clear and frosty; very fine; overcast and cloudy.
Mean	30.080	29.812	51.43	35.43	44.00	41.11	..	0.26	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

FOWLS FOR A CLAY SOIL.

I FANCIED Dorkings were not given to eccentricities, but met with a yard where a cock of dark grey colour at his last moult became pure white. However, that is not my theme.

After thirty years' experience—eighteen on gravel, I could tell a sad tale of several years' on a clay soil, where Cochins, Spanish, Dorkings, and Brahmas successively formed a hospital, and yet worse, too often successfully defied the pharmacopœia and every attention. Some Game-looking, badly marked, Golden-spangled Hamburgs, however, turned up, direct from Yorkshire, and a three-years trial has proved them hardy, great foragers, small eaters, non-sitters, and excellent layers even in winter. I believe they are almost identical with those recommended by Mr. Hewitt in his valuable article of April 3rd, 1860, as the produce of a cross between a Game cock and Golden-spangled Hamburgs, or Pheasant fowls; he adds, "The cross with Moonies was not so productive." Now, as Ambition whispers sometimes, Procure a purer stock, which of the five varieties of Spangled Hamburgs—viz., Golden Moonies, Golden Pheasants, Silver Moonies, Silver Pheasants, and Black Pheasants, is the most hardy and productive? I hope this year, by a visit to the north, to be able to speak with authority about these beautiful fowls, too little cultivated in the south of England.

"R. S. S. W.," finds Brahmas perfection; I must disparage them, but I trust in that friendly spirit which has ever distinguished your columns. I admit that strains vary, and mine were hardy, and fair winter layers, but consumed an enormous quantity of food, and in summer the hens were always wanting to sit, and had a remarkable tendency to accumulate internal fat, and produce shell-less eggs.—HENRICUS.

BATH AND WEST OF ENGLAND SOCIETY.

THE usual meeting of the Council of this Society was held on January 28th at Taunton, under the presidency of Sir J. T. B. Duckworth, and was more numerously attended than on any former occasion.

With regard to the Falmouth Meeting of 1868, it was resolved to celebrate the opening of the Exhibition on Monday, June 1st, by a public luncheon in the show yard, in accordance with the practice inaugurated last year at Salisbury with so much satisfaction to

members and the public. For the information of exhibitors, it may be well to state that the Falmouth Local Committee have very handsomely undertaken, at their own cost, to convey all machines, implements, live stock, poultry, and other articles to and from the Falmouth Railway terminus to the show yard free of cost to exhibitors. This concession will go very far towards removing any objection that may exist in the minds of distant exhibitors on the ground of expense.

A letter was read from the Hon. and Rev. S. Best, on behalf of the Southern Counties Association, established several years ago, very much on the model of the Bath and West of England Society, but proposing to direct its efforts more particularly to the six southern counties—viz., Hampshire, Sussex, Berkshire, Oxfordshire, Surrey, and Kent. In this letter overtures of amalgamation between the Bath and West of England Society and the Southern Counties Association were made by Mr. Best on behalf of the latter Society, and a scheme or basis, on which it was thought by them that an amalgamation of the two might be carried out, was stated in detail by that gentleman.

With reference to the overture contained in this letter a long and animated discussion arose. By some it was contended that the Society's area was already sufficiently extensive and ought not to be in any way enlarged; but it was shown by reference to the early records of the Society, that at the annual meeting in 1779 it was resolved that the counties of Berks, Hants, Devon, and Cornwall should be included within the district of the Society's operations; and in December, 1790, a further resolution was passed, that on account of the established character of the Society and the widely extended residence of its subscribers, the title of the Society should become altered from "the Bath Society for the Encouragement of Agriculture, &c.," to "the Bath and West of England Society." Stress was also laid on the fact that the Society in 1856 affirmed the desirability of holding meetings not only in Somerset, Devon, Dorset, Hampshire, and Cornwall, but also in Wiltshire, Gloucestershire, Herefordshire, and South Wales. Eventually a Committee was appointed to confer with a Committee appointed by the Southern Counties Association, and the Secretary was directed to acknowledge with thanks the communication of the Hon. and Rev. S. Best, in regard to the proposed amalgamation, and to inform him that the Council thought it would be impracticable to effect such amalgamation on the basis proposed by him, but they had appointed a Committee to confer with the Committee appointed by the Southern Counties Association.

It was resolved that for the present year only, the Council Meetings held in the months of February, March, and April, shall be held on the last Saturday in the month, instead of the last Tuesday. The day of Meeting in the other months will remain unchanged.

WESTON-SUPER-MARE POULTRY SHOW.

CAN you inform me what the distance is from the railway station to the yard of the late poultry show at Weston-super-

Mare? I sent three pairs of Pigeons in a small box (carriage from London 2s. 6d.). I was awarded the first prize for Dragons (£1), and much to my surprise the Committee in remitting the money deducted no less than 4s. 4d. for railway charges to and from the show yard. I believe it customary on the part of railway companies to deliver goods free of charge on arrival at their stations, provided the distance is inconsiderable, which I believe it to be in this case; at any rate, it appears to me a most exorbitant charge for the company to make, being only 4d. less each way than for the carriage from London.—J. PENCIVALL, Peckham.

PIGEONS' DISEASES.

I AM glad to find that the doubts I expressed as to the diseases of Pigeons being non-infectious have produced another most interesting letter from Mr. Huie. I have several reasons for believing that roup and cancer in the month will spread if not attended to; among them these two:—Early in last summer I purchased all the forward birds of a breeder in this neighbourhood, one of the best of them a Red Pouter hen having the roup badly at the time. This bird I cured, but not before five out of the seven others had taken the complaint more or less severely. The place in which I kept them was particularly dry and warm.

Two years ago nearly half my young birds were attacked with cancer in the month. They were separated entirely from the breeding stock, neither of them at that time being allowed to fly. However, the disease seemed to spread so much that I gave the birds their liberty, which did them a large amount of good, but at the same time I permitted them to perch on and about a wired court to which the old birds have access during the day, and in a very short time afterwards the same complaint appeared in the breeding loft, how or by what means I am at a loss to conjecture, unless it was passed by the young birds to the old ones.

I am surprised at any one considering these diseases to be non-infectious, but should be only too glad to think that such was the case.

Would Mr. Huie say what number of crosses he considers sufficient between two birds, in order that fine healthy Pouters may be produced?—W. R. ROSE, Cranley Hall, Kettering.

DARK AND LIGHT BRAHMAS.

HAVING long taken great interest in both the varieties of Brahmas, I would like to add a few words upon the subject of the alleged monopoly of all the cups by the Dark birds, "what-ever be the merit" of the Light ones; and I must first express my opinion that "our Persian friend" has hit the nail on the head in more respects than one.

I have been, I think I may say, a keen observer of both varieties, and I can unhesitatingly corroborate the assertion of "Y. B. A. Z.," that hardly ever do we see a pen of Light Brahmas that can be at all compared to even a fair average pen of Dark in the real characteristics of the breed. The combs of the Dark birds are often bad enough, but the Light are generally execrable. The legs are clothed with what may be compared to "unmentionables" in more ways than one; the whole "style" of the birds is usually far inferior, and the head has too often nothing of the true Brahma expression about it. This expression is peculiar to the Brahma race alone, and once caught by the eye is never forgotten. It is difficult to describe, but the head of a true-bred Brahma pullet is almost exactly similar in shape, taper, and expression to that of a Grouse, and is one of the best signs of purity of breed. In Light Brahmas, however, scarcely one bird in four possesses it now.

Mr. Pares's celebrated cock I remember well, and I admit that a better Light bird has never been seen of late years; but I have during the last two seasons seen more than a score of Dark cocks quite equal in size, shape, and style, and at least half a dozen more or less superior.

With regard to the causes of this superiority, "Y. B. A. Z." has also stated the truth, but very far from the whole truth. So far as his own opinion goes, I can give a curious corroboration of it. I was in company at Birmingham with one of your correspondents and another well-known Light exhibitor, both noted first-prize winners in their favourite variety, and we were discussing the merits of the first-prize Light Brahma cock. Both breeders complained of the award, although made by Mr. Teebay, and appealed to me if a cock of "such bad colour" ought to have had the cup. Now, the fact was, that

the bird had such a decided grey bottom colour (as a true Brahma should), that having been much knocked about it gave him a decidedly dirty or dull appearance—certainly, I must admit this, though any one could see that in good condition he would be clean enough; but, as to the style of the bird, his carriage, his shape, his tail—it was the old Teebay model come to life again. The bird was really grand, and I could only wonder his splendid proportions should be overlooked by two such noted breeders.

I have remarked that "Y. B. A. Z." has stated very far short of the whole truth in this matter, and I think I can point out the chief reason of the deterioration he alludes to, and which no amount of legitimate breeding for colour can fully account for, though in part it may.

I have still in my possession somewhere a letter addressed to me by a celebrated exhibitor of both Dark and Light Brahmas, who has taken many a "first" at Birmingham and elsewhere, but whom, as the letter was in confidence, I cannot of course name, expressing his opinion that the Dark is the original and true Brahma, and that the Light variety was produced from it by crossing with the White Cochins. With this opinion of his I have, of course, nothing to do, save to say that it is quite untenable; but the essential point is the fact which the writer proceeded to state, that a large proportion of his own Light birds, which had won numerous prizes, were thus bred between a Dark Brahma cock and White Cochins. Now, it is not necessary to suppose that all or most Light breeders adopt such a plan to account for a cross of this kind causing general deterioration. Birds from any noted breeder are continually being purchased, and thus the taint is carried into other yards and indefinitely propagated. The result is what we see.

The evidence, apart from the letter I refer to, is undeniable to any who understand the Brahma fowl in its proper characteristics. The head I have already alluded to. The comb is another point equally conclusive. Very few Dark strains now, if pea-combed, ever throw a single-combed bird; but in Light, if you pick your stock from any yard, and choose the very best birds, you will have a large proportion of single-combed chickens, showing a tendency to revert to the Cochins type. The narrow deficient breast is a third proof, and occurs in half the pens now seen. And not to mention more minute characteristics obvious to keen inspection, I will adduce lastly the under colour of the plumage. In nearly half the Light Brahmas as now shown the colour is white down to the skin; whilst I have the fullest conviction that no pure Brahma, of any colour, was ever bred that had not a grey bottom colour, whatever the surface might be. To sum up all, I have seen scores of so-called Light Brahma hens, which, except for their black-tipped tails, could in no possible way be distinguished from inferior or degenerate White Cochins.

As to the relative merits, *per se*, of Dark and Light I shall say nothing. The Dark will always be more kept on account of their looking so much cleaner in confinement, but no one can be blind to the exquisite beauty of a really good and pure-bred Light bird. Were I judging a mixed class I should place the birds with regard simply to their merits as Brahmas, weighing well the shape, the size, the build, the comb, &c. These being equal, the cup should go to the pen most perfect in colour according to its own standard; but I can never agree to a cup going to pens, however snowy white, if so weedy, narrow-breasted, bad-combed, and Cochins-crossed, as generally meet the eye. The remedy is in your correspondents' own hands. Let them breed again for size, shape, comb, and feather, and, above all, shun a Cochins cross or taint as they would the plague. I have seen recently a hen belonging to one of the complainants, said to weigh 12 lbs., and she looked it. Her shape, comb, and colour could hardly be surpassed, while her leg-feathering was good, and she had the genuine head—rarest of all. I venture to assure her fortunate owner, that if he will perpetuate that kind of bird, or if he can obtain a cock worthy to go with her, he will not long be "left out in the cold."

While I thus contend, however, that the Dark birds are generally far superior in size to the Light, it is worthy of remark that white birds always look small in comparison with darker; and this fact must be kept in mind by judges in estimating size.—NEMO.

I HAVE been much gratified at the able way in which the claims of the Light Brahmas to equality with the Dark have been vindicated in your Journal during the last few weeks by Mr. Worthington, Mr. Pares, and others.

The growing popularity of the Light birds, and the increasing numbers exhibited at all shows where there is a separate class for them, would, I feel sure, make it highly remunerative to secretaries of shows to insist upon that equality whenever the two classes are competing for the same cup. They would immediately gain a great increase of entries, as Light Brahma breeders will not exhibit their birds in a mixed class as long as it is a notorious fact that these cannot be first, however excellent they may be.

"At the great majority of shows Brahmas have been divided into Light and Dark," as "Y. B. A. Z." writes in your Journal this week. Such, no doubt, is the case; and encouraged by the concessions already made, Light Brahma breeders wish still further to establish the claims of their birds. Dark Brahma breeders are not likely to be dissatisfied when they are always at the top of the tree. Light Brahma breeders will not be dissatisfied when the just merits of their birds are allowed.

"Y. B. A. Z." writes, "Wherever he goes he is struck with the degeneration of the Light birds." Can he have been at the late Birmingham Show? and can he make this assertion after having inspected the fifty-eight pens of Light Brahmas there exhibited?

I trust that there are palmier days in store for the Light birds than any that have gone before, and I do not see why the death of one "old cock," however beautiful he may have been, should daunt the efforts of the Light Brahma breeders.—BENGAL.

[We have several other communications on the same subject, but we can only insert them by degrees.—Eds.]

MEALY POUTERS—MATCHING FOR COLOUR, &c.

The correspondence in your columns respecting Mealy Pouters and their use as crosses appears to be proceeding on a wrong basis to some extent. The question for the breeders of to-day is not so much what may be done in crossing, but what really should be done under the present aspect and condition of Pouters as a class.

I have not had the pleasure of reading Mr. Tegetmeier's work on Pigeons, and therefore approach this subject wholly irrespective of his book or its reviews; but I have had the great advantage of a long practical experience with this class of birds, and for the last two seasons have very carefully studied the great annual Show at Glasgow, the stronghold of the Pouter fancy. On each of these occasions upwards of three hundred Pouters, contributed by the most experienced breeders, were exhibited, and my observation of these birds has led me irresistibly to the conclusion that, in order to obtain great size, vigour, style, and length of feather, a most deplorable deterioration of colour and marking has been permitted; and that, if a radical change in the system of matching be not shortly accomplished, the English Pouter will soon be the worst-plumaged bird of all the Pigeon varieties. Almost any kind of matching promising good results on the side of size, vigour, &c., has been the fashion: hence a very free, not to say reckless, use has been made of Mealies, Chequers, Splashes, and pale birds, for these are commonly to be found of great size and handsome proportions; while colour has become impoverished, the marking more and more wildly inaccurate, and the limb in many instances far too short for the increased length of feather.

Now, what is the remedy for this state of things? and as "colour" is the main feature of this useful discussion, how are we to obtain Blacks of raven brilliancy, Reds rich and lustrous, Blues pure and untainted with chequer, and with bars free from kite marking? Surely by importing into the department of colour those processes of "selection" and mating which have proved so effectual in the domains of size, contour, and vigour; and just as birds have been selected and mated for the production of the one set of properties, must they now be selected and mated for the other, and indeed for any property that may require attention.

While fully valuing advantages already gained, future progress demands that birds of defective plumage should be for a time rigorously discarded; that the soundest colour obtainable should be exclusively used for breeding and crossing; and that the utmost circumspection must be exercised to avoid dilution, or any confusion calculated to impair the colour in richness, smoothness, or lustre.

The revival, purification, and establishment of the standard colours will be a prelude to many interesting experiments and crosses at present wholly impracticable in the very impure

state of the useful strains; and in this revival the Mealy is destined to play but a very subordinate part. His work has been done, and for a while he must be mainly conspicuous by absence. Nevertheless, the object proposed can be accomplished without impairing the Pouter in constitution, size, or symmetry; for in every colour there are many families of grand birds sufficiently unrelated to supply crosses for some time to come, so that little or no plea remains for the continued and direct infusion of doubtful elements, especially as every strain is completely saturated already with Mealy and Chequer blood.

Size and strength exist in profusion, our lofts teem with birds of unsurpassable vigour; it only remains now for the sound fancier to maintain advantages already acquired, and to superadd these properties hitherto neglected and deficient, bearing in mind that his real triumph can never be in one-sided excellence, but in accumulating in one specimen as many or all of those properties which give charm and character to the English Pouter.—W. VOLCKMAN, *London*.

PIGEONS, THEIR COLOURS AND DISEASES.

I CANNOT refrain from adding my meed of praise to Mr. Huie for his able article on Mr. W. B. Tegetmeier's work on the domestic Pigeon.

I think it would add considerably to the benefits conferred by your Journal, if some of our most experienced fanciers would insert an article occasionally on matching, breeding, and rearing the high class fancy Pigeons, their diseases, cures, &c. This would be a great boon to amateurs, and fill a want that has been long felt by young fanciers, seeing we cannot supply it by any of the latest productions published.

I quite coincide with the remarks Mr. Huie made in your Journal of the 16th ult. I purchased a bird on the Continent in August last. On its arrival here I found it suffering from roup; I kept it confined in a cage for six weeks, giving it roup pills, and washing its mouth and nostrils with alum water. I found it made little progress. I caught hold of it and threw it into the loft where upwards of fifty more birds were. It has remained with them up to the present time, taking its food from the same hopper, and drinking from the same fountain as the others, and am glad to say not one bird has caught the disease.

With regard to matching for colour, it is certain, and must be patent to the most obtuse observer, that on matching Yellow or Red, and Mealy together, it is a thousand to one but the produce will be worthless mongrels as far as colour is concerned, while by proper selection of colours you can in every instance depend on obtaining good colour, whatever the colour of the progeny may be. I have seen, I may say, all the best birds in Great Britain, and venture to say I never saw twenty good-coloured Reds and Yellows in the whole collection, which must account for so many bad-coloured birds, if the system in question be persevered in by some of our largest breeders.—A. H. STEWART, 4, *Anderton Street, Birmingham*.

[Our columns are open to Pigeon fanciers, and we will readily insert their communications, for we wish to make this Journal their organ for obtaining and imparting information.—Eds.]

UTILISING AND UNITING CONDEMNED BEES.

(Continued from page 106.)

OPEN driving is somewhat slower in its operation, as the bees can ascend only from one side of the hive; but it is by far the most convenient when it is deemed either advisable or essential to secure the queen. In this case it will be well for the beginner, before commencing operations, to pass the threaded packing-needle just through the crown of the empty hive from the inside, leaving the string hanging. Then commence as before by blowing a few whiffs of smoke into the inhabited hive, invert it on the bucket, put the bee-cloth and decoy hive in their place on the floor-board, cover the inverted hive with the one in which the packing-needle has been inserted, and stand the whole on one of the chairs in some shady spot. Having ascertained in which direction the combs run, stick the skewer into the edge of the lower hive opposite that end of the centre comb towards which the bees appear most to congregate, and turn this part away from the operator, who, with the left hand supporting one side of the empty hive, keeps it upraised in such a manner as to afford a clear view of the interior, and raps away with his right, whilst his gaze is intently fixed on the point of junction between the two hives,

where the bees will soon begin to ascend, and which it is certain the queen must pass. If, as is very generally the case, a number of bees gradually form a thick cluster at this point, under cover of which the queen may, perchance, slip past unperceived, the upper hive should be lifted and so far turned round as again to present a clear surface, which her majesty will scarcely be able to traverse without being perceived. And here, probably, many will be inclined to ask if the queen is not invariably amongst the foremost, since we are told in bee-books that she is always one of the first to ascend, and it is a popular idea that the queen leads the workers on these and similar occasions. All this is, however, a mistake; the queen may make her appearance at any moment, sometimes with the vanguard, oftener amongst the main body; sometimes with the rear-guard, and occasionally, although very rarely, she lingers among the last few stragglers remaining in the hive. As soon, however, as she is perceived she should be adroitly seized by the wings, popped into one of the little perforated boxes,* which is then tied to the loose end of the string, and by means of the packing-needle drawn up to and secured in close contact with the inside of the crown of the upper hive.

The desired object having been attained, the operation may be brought to an end as rapidly as possible, either by close or open driving, and the deserted hive conveyed in-doors. Should the queen escape detection, and it be merely intended to drive the inhabitants of two hives into one with the view of establishing them as a new colony, the same look-out may be kept for the second queen, whilst the bees are being driven in a similar manner into the same hive. If, however, she also escape, it is probable that no great harm will have been done, since bees generally dispose of a superfluous queen under such circumstances without much loss of life. There are, however, exceptions even to this rule, and sometimes both queens are sacrificed. It is precisely to guard against such casualties that I always take the trouble of at least endeavouring to secure the first queen in the manner I have described, and when I miss her (which, however, occurs only in a minority of cases), I do not drive a second colony into that hive, but reserve it for a purpose which I shall afterwards describe. I have stated that a veil or bee-dress is but seldom used, and however extraordinary it may appear to many, it is, nevertheless, a fact that an adept will prefer to practise even open driving with exposed face and unencumbered hands, whilst it is equally true that he but rarely receives a sting. I do not, however, commend this example as one to be immediately emulated by the beginner, who should not disdain the protection of a veil and india-rubber gloves, unless he happens to be constitutionally impervious to the effects of bee stings.

When the inhabitants of two hives are driven into one, it is better, as soon as the operation is completed, to confine the bees by standing the hive containing them on the floor-board of the strongest of the two stocks, and tying them up in the cloth with which it is covered, without regard to the stragglers from the other colony, which are not likely to be very numerous. It is, in point of fact, advisable to adopt this course in all cases if the operator intends to quit the scene of action before nightfall, as the bees will congregate more completely within their new dwelling a few minutes after it has been placed on the old stance than they are likely to do until darkness begins to close in. The safe custody of the bees should be farther insured by a string or small cord tied tightly around each hive and outside the cloth between 1 and 2 inches from the bottom, whilst ventilation should be cared for by standing the hives on an uneven surface, or raising one side an inch or two by means of a stone or block of wood.—A DEVONSHIRE BEE-KEEPER.

(To be continued.)

FISH FAILING IN AN AQUARIUM.

STAUNCHING A CANARY'S BLEEDING.

I HAVE a large aquarium with an almost constant fresh supply of water flowing into it. It contains about ten gallons of water, and I am unable to keep fish of any kind alive in it beyond two or three weeks. Its contents are a brass lacquered tube for the pipe, shingle, washed sand, and the following plants—*Potamogeton oblongum*, *P. gramineum*, *Ranunculus aquatilis*, *Vallisneria*. The fish almost at once become affected with some fungoid growth, and seem to shrink and wither. They are fed occasionally with the small red worm, but soon die. Is

* As the object of imprisoning the queen is generally to keep her alive for a few days in case of accident, it is desirable that a few workers should share her captivity.

this explained by any improper plant, or is the brass tube the cause of my trouble?

I will mention one other subject before I close. I called in a noted bird fancier to cure a deformity in the leg of my Canary. His remedy was to amputate with a pair of scissors close to the joint. Considerable bleeding followed, and he suggested a hot wire, but this I considered adding one barbarity to another, and instead I applied the perchloride of iron, which immediately arrested the hemorrhage. Therefore I recommend it with full confidence as being a potent application in case of injury to the combs of fowls by operation or accident, and one free from pain.—WM. SOPER.

[We know a similar sized aquarium similarly managed, and in the water of which similar plants vegetate, and in that aquarium Gold and other fish, small tortoises, &c., are long-lived. Is there not something deleterious in the water you employ for the aquarium?]

FEEDING BEES.

PLEASE to inform me if I had better feed my bees now (January 25th), or what I had better do. No. 1 weighs, exclusive of hive, 17 lbs.; No. 2, 19 lbs.; No. 3, 11 lbs.; No. 4, 18 lbs.—G. J.

[We should consider the stocks amply provided with food, with the exception, perhaps, of No. 3, which, however, will doubtless do well enough until the latter end of next month, when spring feeding may commence and the deficiency he made good.]

OUR LETTER BOX.

POLISH FOWLS' EGGS (*St. Edmunds*).—We recommend you to consult our advertising columns, and to write to any one of the advertisers who has taken prizes with birds of the variety you require.

HOUANS (*Jemima*).—Write to Mr. Baily, 113, Mount Street, Grosvenor Square, (A. P. C.).—We think you may safely keep Houans if your wall is 5 feet high. We do not find them disposed to stray or to fly.

SPANISH PULLETS' COMB DRYING-UP (—).—Your Spanish pullet is failing in condition. Nothing is more certain evidence of it than the drying-up of the comb; but judging from what you say, we should look for a quick return to health. If she has not a grass run, she should be well supplied with sods of growing grass, with lettuce if to be had, and with cooked meat chopped fine.

DUBBING A GAME BANTAM COCKEREL (*H.*).—The skin under the throat should not be touched at all. The comb, gills, and deaf ears must all be taken off closely—as closely as possible, but the skull must not be laid bare. The gills must be taken off so that when the wound is healed there is nothing to show where they were. They should be cut off the skin under the throat.

DORRING COCK (*J. H. J. S.*).—The bird requires no other treatment than that you are giving him. We do not for a moment believe he is otherwise than a useful bird. Such complaints are common at this time of year, but a little patience proves them to be groundless.

KEEPING POULTRY FOR EXHIBITION (*Maggie*).—If you want to breed prize poultry you must have a larger space for rearing chickens than that you name. You have room for the parents, and sufficient to breed anything of perfect quality; but the chickens want more space than 20 feet square. You may rear good useful birds, but we fear there would be no prizetakers among them. Your other arrangements are good. You will find the knowledge you require in any of the poultry books. Be careful by some means or other to provide your fowls with growing grass.

AMOUNT OF FOOD FOR FOWLS AND DUCKS (*Constant Reader*).—We cannot say what amount of food your Ducks and fowls require, because we do not know how much they find in the farmyard—for instance, whether threshing is always going on, whether hogs are being fed—in fact, whether food is to be had for the looking-for. Ducks do well on oats. The fowls will want barley. Their appetite must guide you as to quantity. As a rule they require more in winter, and less as the weather improves in temperature, and the nights become shorter.

SCURF ON LEGS OF WHITE COCHIN-CHINAS (*Surrey*).—The scurf of which you complain is caused by the action of snow on the legs. It will soon disappear from the legs of the pullets; it will remain much longer on the legs of the hens. In some cases it becomes chronic. Time will cure it, but stimulating ointment accelerates recovery.

OLDHAM SHOW.—In last week's Journal the Messrs. Newbitt are represented to have taken the third prize in Any other variety of Ducks. My Buenos Ayrean Ducks were by mistake penned in their pen, which should have been empty, as they did not send the Ducks they had entered. Mr. Charlesworth's pen of Brown Call Ducks were by mistake put into my pen. They were highly commended, and mine took the third prize.—SAMUEL BURN, *Whitby*.

CHINCHILLA RABBIT SKINS (*W. L.*).—We do not know the present price of Chinchilla Rabbit skins. They are articles of export, and vary in price.

LIGURIAN BEES (*Novice*).—We do not know any one on the Continent to whom you could apply. Advertise for the information.

DEAD BEES TROWN OUT OF A HIVE (*A Subscriber*).—The mortality, about two hundred, is rather large, but so far does not appear to be serious. We presume your bees do not want for food, but a few ounces of diluted honey or simple syrup presented to them in an inverted bottle on fine and mild days may be of service, and can in any case do no harm.

BAR-FRAME HIVES—CENTRIFUGAL MACHINE (*A Lover of Bees*).—We believe the only English patent ever granted for bar-frame hives was obtained by Major Munn. We do not know the date of this patent, but have little doubt that it expired long ago. Mr. Woodbury promises a description of the German centrifugal machine. If you write direct to him at Mount Radford, Exeter, he will furnish the required particulars as to price, &c. We readily answer all queries on apianian subjects, and record all that is new.

WEEKLY CALENDAR.

Day of Month	Day of Week	FEBRUARY 13—19, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.		Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.		Days.	m.	a.
13	Th	Meet. of Royal and Zoological Societies.	44.0	23.3	36.6	14	24	af 7	9	af 5	48	af 11	48	af 9	20	14	30	44
14	F	Meeting of Royal Institution.	45.3	30.5	37.9	15	19	7	11	5	4	af 11	16	10	21	14	28	45
15	S	Royal Horticultural Society, Promenade.	46.3	31.2	38.8	15	17	7	13	5	56	0	47	10	(	14	25	46
16	STW	SEXAGESIMA SUNDAY.	46.3	30.4	38.4	10	15	7	14	5	59	1	29	11	23	14	22	47
17	M	[and General Meeting.	43.9	30.6	37.2	17	13	7	16	5	58	2	53	11	24	14	18	48
18	Tu	Royal Horticultural Society, Fruit, Floral.	45.0	30.6	37.8	17	11	7	18	5	53	3	after.		25	14	13	49
19	W	Meeting of Royal Agricultural and Meteorological Societies.	46.6	30.7	38.6	15	9	7	20	5	49	4	31	1	26	14	7	50

From observations taken near London during the last forty-one years, the average day temperature of the week is 45.3°; and its night temperature 30.5°. The greatest heat was 59°, on the 16th, 1867; and the lowest cold 0°, on the 13th, 1855. The greatest fall of rain was 0.50 inch.

NOTES ON LILIUMS.

SELDOM seeing in the Journal any remarks relating to Lilies, I fancy they do not receive the attention to which they are entitled by their great beauty and variety. I am aware that since the introduction of *Lilium auratum* there has been a "run" on it, and it has been considered "the thing" to grow it; but still I do not think that it has induced many persons to cultivate the other species. I am foolish enough to still prefer the varieties of the old *Lilium speciosum* to *Lilium auratum*. I am aware that when the flower of *auratum* first opens it is wondrously beautiful and grand, but on the second day it loses its freshness, and by the third its colours are dull, and all its beauty gone. *Speciosum* varieties, on the contrary, increase in beauty and brilliancy for several days. Do not imagine that I underrate *auratum*, I admire it much, and am growing some two hundred bulbs of it, and I feel great pleasure in comparing and noting its numerous varieties, although I have not as yet been so fortunate as to find any red-banded or spotless ones amongst my numerous family. I have been crossing my *Auratum*s and *Speciosum*s, and also some of the rare and little known but very beautiful varieties of the Lily tribe, and I have now a large lot of juveniles, but it will be many years before I can know to what extent I have been successful in producing beautiful hybrids.

I grow all my Lilies in pots, and during the last season I took notes of the best varieties. In the winter I have a "second summer" among my flowers by looking over these notes as I sit by my fireside. I place a few extracts at your disposal, but fear that your readers will see nothing but "dry bones" where I find continual enjoyment in mentally filling up the bare records of dead beauties. I have procured my varieties of *Speciosum* from various sources, and find that they vary very much. Some under the same name would be very fine from one grower, and from another utterly worthless. I have, therefore, given the name of the vendors in each case.

Lilium speciosum Schrymkei (C. Verdier).—Petals very broad. Flowers very large, and of perfect form; dark ground, and very dark spots. Fine habit. Very splendid, the finest of this species.

L. speciosum Harrisoni (Harrison).—Very broad petals. Flower of fine form, flesh-coloured ground, with bright spots. Good habit, but the foliage inclined to curl. The largest flower of this species. Very fine.

L. speciosum atro-purpureum (Laurentius).—Broad petals. Moderate-sized flower, of fine shape; dark rose ground, with dull crimson spots. Splendid habit. Very fine.

L. speciosum album praeox (Laurentius).—Petals broad. Flower large, and of perfect shape. Splendid habit. Very much earlier than the old *album*, free flowering, and very fine.

L. speciosum Flora (Laurentius).—Broad petals. Flower medium-sized, and of fine form; bright ground, with crimson spots. Fine dwarf habit, free flowering. Very fine.

L. speciosum album (E. Verdier).—Very broad petals. Flower very large, and of very fine shape; pure colour. Fair habit. Fine.

L. speciosum corymbiflorum rubrum (Veitch & Sons).—Petals broad. Flowers large, and of fine form; bright rose ground, with dark rose spots. Habit good. Fine.

L. speciosum cruentum (E. G. Henderson).—Long narrow petals, very much reflexed. Flower medium-sized, and of good shape; cream ground flushed with rose, plum-coloured spots. Very distinct and good. Bad habit.

L. speciosum rubrum punctatum (Laurentius).—Broad petals. Flower small, and very much reflexed; pure white ground, dull flesh-coloured spots. Splendid dwarf habit. Very distinct and good.

L. speciosum atro-rubrum (Wheeler).—Petals broad. Flower of medium size and fine form; dark ground and spots. Very good.

L. speciosum atro-sanguineum (Wheeler).—Medium petals. Small flower of good shape; beautiful dark ground and spots. Very fine.

L. speciosum roseum delicatum (E. G. Henderson).—Petals very broad. Flower large, and of fine shape; French-white ground flushed with light rose, dark rose spots. Fair habit. Distinct and fine.

L. speciosum purpureum (Laurentius).—Medium petals, and medium-sized flower of very fine form; rose ground, much deeper in the middle of each petal, forming quite a dark band; also much darker and brighter just beyond the point of the nectary; extremely dark spots. Fine dwarf habit. Very distinct and splendid.

L. speciosum rubrum (E. Verdier).—Petals very broad. Flowers large, and fine form; flesh-coloured ground, with large purple-crimson spots. Good habit. Fine.

L. speciosum roseum (Hooper & Co.).—Very broad petals. Flower large, and of fine shape; ground almost white, with purple-rose spots. Good habit. Fine.

L. speciosum Vestalis (Wheeler).—Medium petals. Medium flower of very fine form; colour dead white. Foliage very dark green. Habit fine. This very distinct and beautiful variety was raised by Mr. Wheeler, of Warminster.

L. speciosum rubrum (Laurentius).—Very broad petals. Flower large, and of fine shape; mottled rose ground, with bright crimson spots. Fine habit.

L. speciosum Hendersoni (?) (E. G. Henderson).—Broad petals. Large flower of perfect form; purple rose ground, with dark, rich, crimson spots. Distinct foliage, and good habit. Splendid. This was obtained as *Harrisoni*, but is very different from that variety.

L. speciosum regale (E. G. Henderson).—Beautifully formed flower of medium size; ground and spots very dark. Very bright and beautiful. Good habit.

L. speciosum monstrosum (?) *roseum* (Barnaart).—Broad petals. Medium-sized flower of good shape; pale flesh-coloured ground, bright rose spots. Good habit.

All the twenty I have mentioned I consider fine, and they are mostly distinct, and some of them are very lovely. The following are good, but not up to the standard of the first lot:—

L. speciosum punctatum (E. G. Henderson).—Large and

well-formed flower of very delicate colours, but rather dull-looking. Habit bad, and a shy bloomer.

L. speciosum corymbiflorum punctatum (Laurentius).—This is one of the monstrous varieties, with the flowers all in a heap, a style which I do not admire, but the freshness and delicacy of colour in this flower induce me to tolerate the hideous stem. — *L. speciosum macranthum* (Laurentius).—Good, large, dark flower, but dull in colour.

L. speciosum compactum (E. G. Henderson).—Flower small, very dark, but dull-looking. Very dwarf habit. Erect flowering. Shy bloomer.

L. speciosum rubrum Extra (Van Geert).—Good-shaped medium-sized flower; ground flushed with rose, dark spots.

L. speciosum album (Van Geert).—Medium-sized flower of good shape; beautiful, pure colour. Fine habit; the bud not liable to twist as in the old album. It is also much earlier than that variety.

There appears to be great confusion in the trade respecting the varieties of *Lilium speciosum*, and when you order from any list it is very uncertain what sorts you will obtain. There are so many different strains of *Lilium speciosum album*, *roseum*, *rubrum*, and some others, that it appears to be quite impossible to keep them distinct.

Although there are many other species to dilate upon, I must conclude this paper, hoping that some other Lily-grower will give us the benefit of his experience, and let us know what choice varieties he has the happiness to own. Perhaps some raiser of seedlings will tell us the results of his labours, and describe the beautiful "bairns" he is the father of, and how many years passed before they showed him their lovely faces.—*HEPHERUS*.

SOILS AND SITUATIONS FOR CONIFERS.

NOTWITHSTANDING all that has been written on Conifers, the question is still often asked, What position should this or that Conifer occupy? Failing to secure correct data to guide us in these matters, except the teaching of Nature, which all of us have not the opportunity of obtaining, perhaps the nearest approach to it would be a statement of the experience and observations of your readers, the particulars of which could be condensed into tables, and, perhaps, the various subjects could be arranged in classes, having regard to situation, soil, &c. An arrangement of this sort would do good service—it would prevent much disappointment, and be far more valuable in my opinion to future planters than details of the effects of frost without such particulars, because in many instances it is more than probable that the soil has caused the mischief and not the frost, and that the position is at fault when trees are blown down, and not the wind. I believe it is often the case that the very preparation of the soil for planting some of the best Conifers is only laying the foundation for their death; not because they refuse to grow in the soil, but because they are forced to an excessive growth.

The havoc made by frost in the case of *Pinus insignis* is in many instances attributable to the soil it is planted in; in short, the soil is too fertile, and, like an overfed child, the tree succumbs to the first attack of cold.

I have seen pits dug deep and broad, and filled with rich compost for this tree. I question if this practice would answer even where the temperature is never below the freezing point. What is the consequence? Long shoots, which before they are properly hardened start into growth again, and before this growth is completed grim winter is upon them. What chance has a tree in such a state to pass through a severe winter?

Again, I have seen this tree treated in a way quite opposite—i.e., having no preparation of soil beyond the breaking-up of the natural one, which was stony and poor. The tree made short shoots yearly, but became thoroughly hardened, and seemed to stand cold or wind as well as *P. austriaca*. Here was an exemplification of consulting Nature, while the other case was an unwise interference with her laws. If a tree is adapted by Nature to grow on rocks and between rocks, adapted to entwine its roots around stones and bore deep down after moisture, why should it be placed in a moist soil prepared with high-feeding ingredients?

The Pinuses, as a class, ought to occupy an elevated position on stony ground, and if it is found necessary that they should be fed, let it be done by mulchings on the surface. The Spruce family, according to my observation, will do best in lower positions; indeed, the best plantation of Spruce I ever saw was in wet clay with a fall sufficient to carry away the water,

which ran out of it through the winter. The trees will take a firm hold in deep soil though it be poor, so long as it is damp; while Larch, for instance, although it seems to penetrate a rock in some situations, will not go through wet clay. I have known the Larch grow to a good size and be at last blown down because it had no hold in the soil, none of its roots being found more than a foot beneath the surface in such situations.

The Arbor Vitæ and Junipers will succeed in low places where the soil is rather damp, better than in high dry places. I am speaking of the natural soil. There is still some doubt as to where the *Taxodium sempervirens* should be planted. Much has been said against low damp situations for planting this tree, and that it will not thrive there. Now, my experience and observation are opposed to this assertion; provided the tree is not overfed with rich matter in the soil, I believe it would even grow in a bog. The first tree I ever saw, which is nearly twenty years since, was planted very near a piece of ornamental water, and it did so well that I have always thought it out of place in any other but low damp situations. Its rusty appearance in elevated positions tends to confirm this view. I have seen it since in similar damp positions doing equally well, and I could point out some trees growing so near the water that many of the roots must be under water all the year round. It is in company with the *Osmunda regalis*, a Fern which delights in moisture. That circumstance alone would at once give sufficient evidence of the nature of the situation; but there is more clay here than is commonly found where this Fern abounds. The appearance of the tree just alluded to is everything one can desire, not in the least drawn-up, but short-jointed and dense, with a dark green colour seldom seen in trees in higher positions. I shall, therefore, put this tree in the class for damp situations.

The east wind is a great enemy to *Taxodium sempervirens*. Having several trees under my daily notice in almost all kinds of situations, I find those exposed to that wind are always brown on the east side, and one-sided besides. The east wind seems to singe the young shoots as they appear, and the trees are miserable, irregular subjects destitute of beauty. Others in a moderately dry soil, although they always look brown in spring, do grow a little every year, but are very poor trees compared with those planted in moist situations. One feature I have noticed in trees in high dry situations, not open to east winds, which I have not seen in those in lower places—is that they blossom; and I have picked a few cones from them, but the seed has not grown. This *Taxodium* is a beautiful tree when well grown, and the timber, I am told, is also valuable; it ought, therefore, to be extensively planted.

I have not had the opportunity of testing the *Wellingtonia gigantea* in wet places, but the tree being from the same locality and so much resembling the *Taxodium* in some respects, I have no doubt it will do in moist situations.

I have found the Cedars do best on high stony ground, while the *Cryptomeria japonica* will grow in a very wet soil. I have seen some trees so near the water that unless the *Cryptomeria* was fond of moisture the roots must have rotted, but this has not been the case, the top of the tree having every appearance of health. Not far from the *Taxodium* alluded to above as being near the water, there are some *Cryptomerias* growing in a manner I have never seen in trees planted in high positions. In colour and character the trees are so different from many growing in similar positions, that one might be excused for taking them to be another variety. Some Cypressess are also flourishing in the same soil. A Silver Fir which is, I should imagine, a self-sown one, is growing in an island in the middle of the water; although it is no better than many others, yet it is a proof it will stand wet soil.

I might enlarge these notes by citing instances which tend to prove that many of the Conifers will not only do well in damp places, but there succeed the best; but my object when commencing writing was to condemn high cultivation, or over-feeding of Conifers, which is often the cause of failure where the trees are in low places, and not the situation. If this matter be attended to, and care be taken to give room, air, light, and as much sun as possible to the top of the tree, there will be less complaints respecting the failure of Conifers.—*H. MILLS, Enys, Penrhyn.*

CATERPILLARS ON BEDDING AND OTHER SOFTWOODED PLANTS.—My bedding and other softwooded plants having been seriously injured by caterpillars, I was induced to feed up several specimens, and found them to be the caterpillar of a moth

which I have no doubt is the cabbage moth (*Mamestra brassicae*), very destructive and common everywhere. The perfect insect appears in May and June.—FRANK FOWLER, *Ravenstale Park Gardens, Newry, Ireland.*

POTATO PRODUCE.

THE extract which you gave from the Journal of the Royal Agricultural Society on Potato produce was exceedingly interesting. The experiments having been conducted on so large a scale, and with the great care and attention which Mr. May bestowed upon them, are, doubtless, entitled to great weight and consideration, and are very important. Very possibly I am wrong; but, still, the deductions derived from the result of his experiments are, to my mind, somewhat contradictory, and it would be a great boon to Potato-growers in general if some of your correspondents would be good enough to give us their experience, or the result of any experiments they may have made in the culture of the Potato. I cannot help thinking that it would have been useful if Mr. May had enumerated the varieties experimented with, the nature of his soil, the quantity and nature of the manure used, and whether the plants were earthed-up or not.

I cannot quite reconcile in Mr. May's *résumé* of the results the following deductions:—

1.—“Every increase in the size of the set, from 1 oz. to 8 ozs., produces an increase in the crop much greater than the additional weight of the set planted.” 5.—“That the weight of the crop is proportionate to the weight per acre of the sets, and that small sets will produce the same crop as an equal weight per acre of large sets.” The remainder of the deduction as to the fact being of limited application, is, of course, indisputable. 7.—“That smaller sets give a larger produce in proportion to their weight than the larger sets.”

Deductions 1 and 5 do not, according to my interpretation of the experiments, coincide with 7; for it would appear that if an acre were planted with small sets, which Mr. May admits may be planted with advantage at less intervals than larger ones (3 and elsewhere), and also assuming that each of the small sets would give a proportionately larger produce (7), would it not clearly be a profit in the produce of the acre, and be particularly important to small growers, who purchase their Potatoes by measure, and who would thus obtain a greater number of smaller sets, and also to those who do not keep pigs, and might thus utilise all their sets, which were too small for the table? The word “produce” may possibly, as used in 7, refer to the number of tubers, which would, of course, alter the case; but the experiments being conducted in general with reference to weight, I should not think that an exception was made in this instance.

I will now state one or two facts which bear upon the subject, and are derived from experiments, or rather the trial of some different varieties in 1866, the following year to that in which Mr. May's experiments were made, and which year was in our neighbourhood rather a good one for Potatoes. It was then that I first tried Potatoes without earthing-up, but my gardener was wedded to the old system; each plan was tried with several varieties, and on the same piece of ground, but although the result was in favour of the old plan, I was convinced that the sets had not been planted deeply enough. In 1867 I took care that they were planted from 6 to 8 inches deep, and the result effected a complete conversion of opinion on that point. I should be glad to hear your opinion, though I feel almost sure you will advise deep planting and not earthing-up. The Potato which succeeded best in this way was Wheeler's Milky White. This is a first-rate Potato. A few Flukes came up the next year, small sets which were overlooked, having remained in the ground, and the average crop of these was 18 ozs. per set. Now, no small sets in Mr. May's experiments could well have produced this weight, none but small sets could have well escaped notice in my case, and the highest average in his experiments with 2-oz. sets was about 16½ ozs. I tried the following Potatoes:—Rivers's Royal Ashleaf, two varieties of Flukes (I do not know their names), Gloucestershire Kidney, Baron's Perfection, Flourball, Pheasant's Eye, and Snowball. According to my experience, small sets of the Gloucestershire Kidney produced a larger crop than the larger ones, and the same with Snowball; but I do not care about this variety, it is not sufficiently mealy. Baron's Perfection gave the largest crop at about 4-oz. sets.

I intend to make some more extended and careful experiments this year; but at present I cannot help thinking that

the best size to plant is from 2 ozs. to 5 ozs., that it is best not to earth-up, and to plant 9 inches from set to set in the rows, each row being from 18 to 20 inches apart.—W. S. R., *The Florence, Coleford, Gloucestershire.*

LAPAGERIA ROSEA AND LAPAGERIA SPLENDENS.

I AM glad to see that Mr. Douglas has been the first to write on the culture of these splendid plants, and I hope his remarks will be followed by others. I am the fortunate owner of two as fine plants as any in England: so says one who ought to know.

They have been left almost to themselves, and had plenty of water summer and winter. Many of my friends recommended rest; but the fact is, they would not rest since 1864, and were growing up to last May. I then experienced a sad fright—I thought my best plant was going to die, but no: it went to rest until the end of June, and in July began to show flower buds, and continued flowering up to Christmas. I bought it in 1857 when a very small plant.

Mr. Douglas speaks of seedlings at 2s. 6d., but I am afraid our friends will have a long time to wait before they flower. My plant above mentioned did not flower till 1866. It is *Lapageria rosea*. It evidently makes strong wiry roots downwards, and likes its crown kept high. I have seen a good many plants of it, but none of the vigour of mine. I do not find that it is subject to the attacks of any of the greenhouse pests mentioned, but in its younger years slugs were sure to find it out; it defies them now, for its stems are as tough as wire. I have just finished repotting one of my plants into a pot 2 feet in diameter—the largest I could obtain—and I carried out Mr. Douglas's advice with respect to soil. I should mention that occasionally I put a little Condy's patent fluid into the water. It sweetens the soil and stimulates the plant; and if any of your readers would try it on their *Primula* plants that have nearly done flowering, they would be astonished at the effect. I put in enough to make the water of a pretty pink.

As to the mode of training, I have the pots sunk into the table at each end, which is 14 feet long; a light wire arch is thrown across, so that one plant meets the other, the flower buds coming through and hanging down like so many scarlet bells. Any one purchasing a plant I recommend to buy a good plant well established.

Lapageria splendens flowers in clusters, whilst *L. rosea* has only one flower at the end of its stalk. The former has a long sharp leaf, whilst that of the latter is more round and something like the leaf of *Lapageria alba*. Any of our friends having plants of either must not lose heart at the growth not being rapid at first, for they will be astonished some day by seeing them throw up something like the head of an Asparagus. Mine last year threw up four the size of a man's little finger, and they are now 10 feet long.

I never knew a flower last so long as that of the *Lapageria* after it is cut. I gave a flower of it to a lady who wore it in her hair at a ball, next night at the theatre, and had it fresh still hanging on its stem a fortnight longer. It does not turn brown at the tips like the *Camellia*.

I have sent you a photograph of my plant. You can make what use of it you like. I should say that sometimes in winter the thermometer in my house has been as low as 32°. The plant seems to live in extremes.—W. A. O., *Sunderland.*

[The photograph shows a very superior specimen of *Lapageria rosea*; and beneath it sits its owner, looking as bright as if care had no chance with him.—Eps.]

IS A DRY OR MOIST ATMOSPHERE THE MORE CONGENIAL FOR SETTING MUSCAT GRAPES?

ON looking over your Journal for January 16th, I saw some remarks on the above-named subject by one of your able and experienced contributors. It has often occupied my thoughts, but I trust that the readers of these few remarks will not suppose that I am about to give a direct answer to Mr. Melville's question, but simply to state a few facts that have come under my special notice at different times.

At my present situation we have a house containing twelve Vines of Muscat of Alexandria, which every year are in flower in the month of April. I have noticed that during the whole time these Vines were in flower we have had dull wet weather;

this I have noticed for two successive years. There would be an occasional outburst of sun for a few minutes in the course of some chance day or two during the time, but nothing worthy of note; yet notwithstanding all this unfortunate, bad state of the weather, as many would term it, we never failed in obtaining a good regular crop of Muscats with well-formed bunches.

Another simple fact I wish to state is this. One end of the house is much warmer than the other part, on account of some extra piping branching from an adjoining house, consequently four of the Vines are rather earlier than the rest. These are in flower from a week to ten days before the others, and during this time the atmosphere of the house is kept in the same condition in respect to moisture as it was previous to the flowering, moisture being only slightly withheld just beneath the four Vines in flower, and these set their bunches much better than the Vines to which a rather drier atmosphere is afforded.

Again. I have particularly noticed that in a dull humid day, on gently shaking the Vine or bunch, the pollen will be seen falling in large quantities to the floor; whereas, on a bright clear day with a breeze blowing, the pollen will scarcely be perceived on shaking, and it appears much lighter, escaping upwards. Whether the pollen is as potent on a dull day as on a drier one is another question. I should for my own part say it is, if we are to take the setting of these Muscats into consideration.—H. BATTRAM, Foreman, Cyfarthfa Gardens.

ROYAL HORTICULTURAL SOCIETY'S EXAMINATIONS.

LAST week we announced the various success that attended the candidates at the last examinations of the Royal Horticultural Society. We now supply the number of marks which each candidate obtained.

	Fruit and Vegetable Culture.	Florical- ture.		Fruit and Vegetable Culture.	Florical- ture.
W. Spinks	1225	1080	Robt. Inglis	520	—
B. Wynne	1135	1070	A. Stormont	1085	8 0
F. Hardisty	975	830	J. J. Bull	455	950
F. W. Burbridge	960	1070	J. H. Hart	580	1080
W. Stewart	845	740	Chas. Roberts	750	1020
J. McARDLE	795	770	A. Bradley	1080	—
R. L. Keenan	1005	1080	Jas. Williamson	190	700
M. Middleton	590	675			

CONIFERS FOR A CLAY SOIL.

WHILST thanking Mr. Robson for his hint as regards the fitness of *Taxodium sempervirens* for a clay soil, I beg to say that I have tried it, and that it grows most vigorously. I did not mention it in my last letter, as I was writing more especially about the *Cupressus macrocarpa*; but as my letter seems to have been useful, I will add a few more remarks upon those Pines which I have found grow well in a stiff clay.

As regards the *Taxodium*, the proper name for which I have been told now is *Sequoia* (Is this so?), I find that it is one of the fastest-growing Pines we have, but owing to its shooting very early it is nearly always checked by late frosts, and is much browned by March winds. One I planted in 1858, and moved two years afterwards, is now 17 feet high and 2 feet 4 inches round the stem at the bottom; but it has lost its leader twice if not three times, and in consequence has not increased in height at all for the last two years. Had it not been for this it would have been 4 or 5 feet higher at the least, at the rate of its growth in former years. With this exception it grows as well as I could wish, for neither the frost nor the winds seem to have any injurious effect on the vitality of the tree, and although it has not grown these two years in height, it has in girth. It grows also most freely from cuttings, and I have several specimens about 10 feet high, which I have taken as cuttings from the above-named tree, and which no one could distinguish from seedlings.

One remark of Mr. Robson's surprises me—namely, that in which he says that a specimen of *Cryptomeria japonica* was much injured by frost. Now, I have an avenue of them planted in 1858; and although they have made slow progress, being on an average about 10 feet high only, not a plant of them has ever been injured by frost in the least degree, though planted in the same stiff clay, and I fancied till now that they were one of the Pines that we might reckon as frost-proof. They are just now apparently "taking hold" of the ground, and I think they will make greater progress next year than they have hitherto. Some of them which are a little protected by a wood

near are doing remarkably well, so that the clay (drained) does not seem to disagree with them, though I fancy that they would do better in a lighter soil, but on the whole I have not much reason to complain of them. Now they are accustomed to the soil I think they will some day make fine trees, for in stiff clays such as this I find that one must not be too soon cast down at trees not taking. They are with some exceptions very slow at first, but when once thoroughly established make up for it afterwards. Amongst the trees, then, of the Pine tribe which I have tried that do well in a stiff clay, after *Pinus insignis* and *Cupressus macrocarpa*—which are, perhaps, the most vigorous of all, but unfortunately only half-hardy—I find *P. austriaca*, *Picea pinsapo*, *Taxodium sempervirens*, *Wellingtonia*, *Cupressus Lawsoniana*, *T. Lobbii* (both very vigorous), *Thuja aurea*, *T. glauca*, *Cryptomeria japonica* (fairly), *Juniperus glauca*, and the common Pencil Cedar all thrive.

With regard to what Mr. Chitty says, that his experience tells a different tale, and goes to prove that *Cupressus macrocarpa* is not hardy enough to stand such winters as that of 1867 in all situations—why, that was the very point my first letter on the subject went to prove. No one with his eyes open, after the experience of last winter, could be hardy enough himself to say that; on the contrary, it is quite clear that it is only half-hardy. I endeavoured to point out from experience, besides the fact of its flourishing so well in stiff clays, in what situations it was likely to succeed, and where it would probably fail.—A SOMERSETSHIRE PARSON.

P.S.—I have just planted a *Thuja gigantea*, thinking, on account of its name, that it would grow quickly and to a large size. Can you tell me to what height it is likely to grow? I have also two ten-years-old plants, raised from seed which I gathered from *Cypresses* growing over Shelley's tomb at Rome, that have grown well. One is about 9 feet high; the other, which was the better of the two, was cut very hard by the frost last year, but is still likely to do well, though I have been obliged to cut away 4 or 5 feet of it.

[Gordon in his "Pinetum" gives a very wide range of heights to which *Thuja gigantea* attains. He says it is "a noble evergreen tree, with an umbrella-shaped top, and straight stem when old, growing from 40 to 140 feet high, and from 3 to 5 feet in diameter." Its native habitat seems to be the banks of rivers.

—Eds.]

NOTES AND GLEANINGS.

FROM what we already know, there is every prospect that the ROYAL HORTICULTURAL SOCIETY'S EXHIBITION AT LEICESTER in July next bids fair to rival, if not to excel, that of Bury St. Edmunds last year. According to the last information the amount already subscribed by local effort amounts to £225, as against £197 6s. 6d. at Bury St. Edmunds. It must, however, be borne in mind that Leicester is the centre of a great manufacturing and wealthy neighbourhood, whilst that of Bury is merely agricultural; and we shall be much disappointed if the amount still to come from Leicester be not considerably in advance of that already named. We have no doubt it will be, and that Leicester will not fall short of any effort that may be expected from it.

—THE Midland Railway Company have agreed to convey all plants that may be exhibited at Leicester at the Royal Horticultural Show in July next for a single fare, which must be paid when the plants are sent; and if after the Show they continue the property of the exhibitor, they will be returned free of carriage.

—WE have great pleasure in announcing that the Cotton Supply Association of Manchester has presented MAJOR R. TREVOR CLARKE with an address and the gold medal of the Association for his researches in the hybridisation and culture of the Cotton plant. The medal is a beautiful work of art, and bears the following inscription—"Presented for the Successful Cultivation of Cotton to Major R. Trevor Clarke. Feb. 17, 1863." This needs no comment. All who know how assiduous Major Clarke is in the promotion of all that can benefit art, science, and industry, will rejoice to know that his labours have in this instance met with their just reward.

"CARTER'S PRACTICAL GARDENER."—Under this title Messrs. Carter & Co., of High Holborn, have issued a useful guide-book, arranged in the form of a monthly calendar of the operations in the fruit, kitchen, and flower garden, conservatory,

forcing houses, stove, Orchid house, greenhouse, and pits and frames, together with directions for the management of window plants. There are in addition remarks on pruning and training fruit trees, with several illustrations; on orchard-house management, on the preparation of Mushroom beds, and some other subjects.

MARRIOTT'S SELF-REGULATING BOILER.

In reply to "Rose," we have two of the largest-sized of this boiler at work here. My experience of them only extends to last November, during which time they have done their work so satisfactorily that I have formed a very high opinion of their capabilities and simplicity. I have had a fair share of experience with other boilers, and consider Marriott's superior to any I have before had in giving a more regular heat if attention is paid to the regulator. You can then have the water at the boiling point by opening the regulator to its fullest extent, or by closing it you can completely stop combustion, and, therefore, stop the circulation of the water in the pipes.

The economy of fuel is also great in comparison with the old saddle boiler, as we are enabled to prove by having three of them at work as well. One of Marriott's boilers can work 1700 feet of 4 inch piping as well as our largest saddle boiler can work 500 feet, and not consume any more fuel, although I must acknowledge that the former is rather more particular in regard to the quality than the latter. On the other hand, Marriott's when filled-up in the morning, if the weather is mild, requires no more attendance till about nine o'clock at night, than to set the regulator at whatever degree of temperature you require; whereas the old saddle-boiler may be set down as requiring to be looked to at least from eight to ten times in the course of the twelve hours.

Another great advantage of Marriott's boiler is its requiring no brickwork in the setting, as the tubes are encased in sheet iron and merely set down in the stokehole. Many thought the casing would become so hot that there would be a great waste of heat, but we find it quite the reverse, as so much heat is not given out as by an old furnace.

There are, however, a few drawbacks to this boiler. The first is the great depth of stokehole required; the second is, where coke is scarce, that I am afraid it will be difficult to burn coal in the furnace, but of the latter fuel for it I have had no experience.—JAMES STEWART, *Nuneham Park*.

THE ROYAL HORTICULTURAL SOCIETY'S EXHIBITIONS.

I HAVE read with much interest the observations of "ANOTHER F. R. H. S." in last week's Journal, on the Royal Horticultural Society's Exhibitions for 1868, and although I do not agree with him in all he has said in his communication, there is a great deal in which I quite concur, and which is in my opinion well worth the consideration of the Council and Fellows of the Society. The point to which I mainly refer is the encouragement that the Society has for some years past given to horticultural exhibitions.

Now, there are two views in which these exhibitions are popularly regarded—the one is as a source of revenue, and the other as an encouragement to horticulture. Let us see how far these popular views are correct. The former so long as it is successful is defensible; but whenever exhibitions become unremunerative, and a burden to a Society, then not only prudence but common sense would dictate their abandonment. So long as the Horticultural Society's Exhibitions were without a rival, and had the advantage of novelty and fine weather, they contributed very largely towards the Society's prosperity and usefulness, and after a successful season it awoke like "a giant refreshed," full of vigour, and, no doubt, well-intentioned designs. But the evil days of rivalry and competition arose, and from that time the Exhibitions both of the Society and its rivals, while they became important features in their constitution, were but the insidious flush that betokened disease and decay. All experience has proved this, and hence the popular idea that great exhibitions, as at present conducted, are advantageous to any society, is an erroneous one.

With regard to the second idea, that great exhibitions, as at present conducted, are an encouragement to horticulture, I hold it to be to some extent also erroneous. I should be sorry to say that they have no beneficial effect on horticulture, because I believe they have; but the question that suggests itself to me is, Would not smaller exhibitions, such as your correspondent ad-

vocates, be equally as stimulating to horticultural taste? If we take the magnificent specimens that constitute the collections exhibited at our great shows, we find that very few of them are grown by private individuals, but are shown by nurserymen and others with a view to trade advantages, and without any feeling whatever as to the advancement of horticulture, except in so far as they themselves are advanced also. Those that are generally shown from private gardens will on investigation be found to have very much of the same stimulus infused; the prizes obtained forming not unfrequently an important element in the gardener's wages, while the employer derives both the pleasure and the merit of having produced them. So far as horticulture, therefore, is affected by these large (and bear in mind, I am speaking only of metropolitan) exhibitions, I am of opinion that this second popular view is also erroneous. I am of opinion that smaller and less pretentious exhibitions would have even a greater effect in diffusing a horticultural taste, and encouraging the spread of practical horticulture than these great exhibitions have. When it is considered at how much cost and trouble the gorgeous plants exhibited at these great shows are produced, I am inclined to believe that so far as the masses of amateur horticulturists are concerned, they are rather deterred from following the example than encouraged to imitate it. Hence it is that I agree with your correspondent in advocating smaller shows, where smaller growers would have a field suited to their means, on which to enter the lists with each other, and contest the honour of having produced exhibitions not less meritorious, because they are less demonstrative and produced at a smaller cost.

It is upon this ground that I always advocate, while I admire and derive so much more pleasure and instruction from, the minor shows of the Fruit and Floral Committees, and the spring shows of the Royal Horticultural Society, than I do at any of the great exhibitions; and I am sure that if the shows indicated by your correspondent were to be submitted for the approval of the exhibitors, they would meet with a large measure of success. I refer more particularly to those which have been distinguished by the name of "Sweepstakes," and I venture to say that the forthcoming "Pelargonium Sweepstakes" will be the most exciting, as it will be one of the most interesting competitions of the season. And why should we not have more of these sweepstakes, augmented it may be in some way or another by the Society, in the same way as is done at horse races? There is something analogous to this practised in most provincial horticultural societies. Before an exhibitor can enter his plants, he must pay his "entry money," which goes towards the prize fund of the society. To me it is as unreasonable to expect the Royal Horticultural Society to bear the responsibility of all the prizes, as it would be for the Jockey Club to bear that of the Derby Stakes, which are well known to attain the enormous amount they sometimes do by the subscriptions of the owners when they enter their horses being added to the amount offered by the Race Fund.

As an amateur ardently devoted to the pursuit of horticulture, and one deeply interested in the prosperity of the Royal Horticultural Society, I hope that the time has come when something will be done to promote the extension of the one, and to secure the permanency of the other, and it is with the hope that both may be secured that I have ventured to trouble you with my views on the subject.—S. T. P.

GALVANISED WIRE TRELLISES.

WHEREVER galvanised wire trellises are attached to walls and employed for the purpose of training fruit trees upon, I think it may be safely stated that they have always given the utmost satisfaction to the fruit-grower. I have seen the trellis in use in several fruit gardens myself, and in not one instance did I ever hear it condemned; but, when the number of fruit gardens that there are in the kingdom is taken into consideration, how seldom is the trellis used for the above purpose. This consideration prompts me to ask the question—Why is it so seldom employed? I have tried to find a suitable answer, but without success. Its many good qualities make it appear to be almost faultless, for in whatever way it may be viewed, it shows a decided superiority over the other systems of training.

To those who have not given the subject any consideration, I hope it may be of service to them if I first say that the principal methods of attaching fruit trees to walls are by nailing with strips of cloth, and by fastening the branches to studs, which are fixed in the wall; and, in the second place, I will

mention a few of the points of superiority possessed by the trellis, and then compare it with the other methods.

I think I shall not do much wrong in mentioning the points of excellence in the trellis, if I begin by speaking of its appearance, for at the present day appearance goes a long way in almost everything. Now, no one can say that a well-wrought trellis neatly fitted and properly fixed to a wall, has otherwise than a neat appearance. For my own part I consider that it tends to improve the look of a wall rather than the contrary; but, independent of my own opinion, let a number of persons compare a well-trained wall of trees on a trellis with a wall of trees trained in either of the other modes, and I venture to state that the majority would be in favour of the trellis. However, as it is a point of taste, I will proceed to speak of the cleanliness of the trellis.

Every fruit grower makes cleanliness a most important object; for we all know that without cleanliness in fruit-growing success cannot be expected. Among fruit-growers it is a well-known fact that the strips of cloth which are required in nailing form excellent harbours for all kinds of vermin, their eggs, nests, and the like, all of which give the fruit-grower who trains his trees in that way continual work in order to keep them from overpowering him, while the trellis affords not the least shelter for anything of the kind. In this respect studs stand on about the same level as the trellis.

I will say no more about the cleanliness of the trellis, it would be useless after pointing out its excellence in that respect, but I will follow the subject to the next step, which will be the advantage the trellis possesses in assisting the trees to ripen both wood and fruit. In the first place I will mention that trellises are fixed about an inch, and sometimes more, from the wall, according to the kind of fruit cultivated. We are all taught that if well-flavoured and well-coloured fruit is expected, a good supply of air and light is essential. Now, by having the trees fixed a short distance from the wall, a good passage is allowed for currents of air to flow, and from the reflection of heat from the wall the air becomes nicely warmed, and this is highly favourable to the fruit and wood. This advantage is entirely lost in both the other methods, and the consequence is we find green, unripe blotches on one side of our fruit, as well as soft unripe wood on the back of the shoots.

At the present day economy of time and labour is so much studied, that a few remarks on the subject in connection with the trellis cannot be out of place. The use of the trellis in this respect is admirable. A great many persons, I know, hold as their firm opinion that the trellis is very expensive; but a well-wrought trellis may now be bought for a trifle, and when bought and fixed it is ever afterwards almost inexpensive; while in nailing, every year the nails are drawn and a fresh stock is required, as well as cloth, and it takes much time to cut up the cloth to the proper lengths for nailing. I feel sure that our young men could get through much more work in a given time by tying to the trellis than by either of the other modes, so that in this respect it may be justly said that the trellis is superior. As far as expense goes, the trellis amply repays the outlay in the excellence of the fruit.—*AGRICULTURIST*.

ROYAL HORTICULTURAL SOCIETY.

THE second Tuesday in February is always an eventful day in the history of the Royal Horticultural Society. Like all mundane things, societies never really stand still, but are either getting better or worse, and unless they be subjected to the process of reparation, there is no permanence or stability in their constitution. In these particulars the Royal Horticultural forms no exception. It is, however, to the elements infused in this process on which the healthful and enduring character of reparation depends, and hence this day on which the Society makes choice of the new elements that are to enter into its composition is one fraught with good or with evil for the future. That the choice which has been made is a good one, we believe is generally admitted; and with a Council so constituted, and with a statement so cheering as was on Tuesday submitted to the Annual Meeting, we look forward very hopefully to a career of great and lasting usefulness in days to come.

It must have been apparent to all who have given serious heed to the course the Society has recently been pursuing, that for some time past far more consideration has been given to subjects of a purely horticultural character than had for years previously been the case. Horticulture is in itself, perhaps, the cheapest and the most easily attainable of all luxuries, and

does not require a very large income to indulge in its pursuit; and so long as all superfluous expenditure is strictly watched, and no extravagant accessories indulged in, horticulture itself will never bring either a society or an individual to beggary. This the Society has found to be the case, for during the past year it has done more to identify itself with its legitimate object, and expended more money on purely horticultural matters, than it has done for years before; and yet in looking at the state of the finances as they are presented to us in this year's Report, we find that it has actually, taking the assets of the year into account, a balance in hand to begin the world afresh. This is, indeed, a novel state of matters, and indicates the beginning of a new existence. Three years ago—that is, at the close of 1864, there was a balance due to the Treasurer of £2784 10s. 3d., and liabilities amounting to £3000 on the revenue of the year; or, in other words, the expenditure exceeded the income by £5784. In that year £1984, including rent, rates, taxes, and insurance, was allowed for the maintenance of the Society's Horticultural garden at Chiswick, while £3702 was the portion allotted to the keeping of the ornamental garden at Kensington. At the close of 1865, there was a balance in hand of £12 3s. 2d., with outstanding liabilities of £369 2s. 8d.; and in that year Chiswick received £2236; and Kensington £3323. In 1866, there was due to the Treasurer, £203 17s. 7d., with assets to meet it of £375, and in that year Chiswick received £2475, and Kensington £3238. And now we come to this last year—1867, in which we find that in addition to the current expenditure, no less than nearly £1000 of old debts have been paid off; and although there is a balance due to the Treasurer of £375, there are assets on the year of £120 to pay it with. In this year £1387 was allotted to Chiswick, and £2526 to Kensington.

Nothing can be more cheering to the Fellows and to the lovers of horticulture than to see the old Society emerging from its long-enduring difficulties and again making its influence felt in that direction in which its mission lies. In giving these financial statements, we have done so, not with the view of making any invidious comparisons between the two garden establishments, for we consider that each has its own special object to effect, and we would not depreciate one at the expense of the other; but there is no disguising the fact, as will be seen from the statements we have made, that in former years the grants that were made to the one were out of all proportion to those of the other; and when it is considered that Chiswick is in fact the garden of the Society where its legitimate operations are to be carried out, and the results of its agency exhibited, where the whole of the plants are propagated and grown for the ornamentation of Kensington, and where so much is derived from the sale of the produce to the Fellows themselves, it did seem strange that a sum so paltry should have been doled out to it, while its more aristocratic sister received so large a portion. These facts show that so long as the Society confines itself to its own legitimate work, and limits its expenditure to those objects which come most within its province, there is no inducement and less temptation to fall into difficulties than when trying experiments on the best methods of amusing a miscellaneous multitude.

And now, after what passed at the Meeting, it is our duty to refer to the agency by which this new condition of things has been brought about. It would have been a pleasure to have done so even if the question had not been so publicly raised; but after the observations which Mr. Liggins, for his own sake, so unfortunately made, it is only justice to Colonel Scott that it should be publicly known that all this beneficial change in the Society's condition is due entirely to his hard work and skilful administration since he was elected its Honorary Secretary in the spring of 1865; and when we have said that, we consider it a sufficient reply to Mr. Liggins's inquiry as to Colonel Scott's qualification to hold the office which for the Society's interest he fills so well. If Mr. Liggins has, as he says, been "a Fellow for years," and has manifested during all that time the interest in the Society he now professes, it should have been part of his duty to have at least been able to identify Colonel Scott, and to have assured himself of the services he was rendering, before he made such allusions towards a gentleman who gives so much of his time, and, as we know, sacrifices much of his comfort to serve the Society.

Mr. Liggins, in his speech, said "they wanted to know if he was skilled in horticulture," and "they wanted a man at the head of the department who was practical." He did not state in what sense he intended his observation to apply, nor what direction the practice should take. If he meant it in a general

sense, we do not know any one to whom the term is more applicable than it is to a highly educated Engineer officer, whose training in science and administration, as much as in engineering, is essentially practical. But if he meant it to have a professional signification, and that the Secretary of the Royal Horticultural Society ought to be a professional horticulturist, he is asking for what, during the whole existence of the Society, has never been. One of the most popular and useful Secretaries the Society ever had was a brother of the present General Sabine. This gentleman was not a professional, but an amateur horticulturist, as Colonel Scott is; and his profession, we believe, was that of a Surveyor of Taxes. Dr. Henderson was not a professional horticulturist, and we are sure that neither Mr. Benthall nor Dr. Royle would acknowledge to be "skilled in horticulture;" indeed we doubt very much if either of the latter knew as much about horticulture as the present Secretary does. But we need not go through the lists for the purpose of showing that the office of Secretary need necessarily be filled by a professional horticulturist. What the Society really wants is a gentleman of administrative ability, who can and will bring that ability to bear on the management of its affairs, and particularly on its finances; and we have no hesitation in saying that never since the Society was instituted has it been so highly privileged in this respect as it is now, not even excepting that period when its affairs were under the direction of the much-lamented Mr. Sabine.

ANNUAL GENERAL MEETING.

The Annual General Meeting of the Royal Horticultural Society was held on Tuesday, and there was a rather smaller attendance of Fellows than usual.

In the unavoidable absence of his Grace the Duke of Buccleuch, K.G., President of the Society, the chair was taken by Mr. W. Wilson Saunders, who was supported by General Grey, Lieut.-Col. Scott (Secretary), Major Trevor Clarke, Rev. J. Dix, Messrs. F. Brandreth Gibbs, G. F. Wilson, A. Murray, and H. Cole, C.B.

Mr. G. E. Blenkins and Mr. R. Fortune were appointed Scrutineers of the ballot for the election of members of Council and officers for the ensuing year.

The Assistant Secretary, Mr. James Richards, read the minutes of the last meeting, which were approved and confirmed. The Assistant Secretary then, at the request of the Chairman, read the Annual Report.

The CHAIRMAN said it became his duty to move "that the Report just read be received and adopted;" but before doing so he would be glad to hear anything which any of the Fellows might have to say upon it.

Sir ROBERT MONTGOMERY, Bart., observed there was a notice given of a Horticultural Exhibition at Leicester, and it would, he considered, be necessary for the Fellows to have some details.

The CHAIRMAN was anxious to afford all the information in his power, and begged to inform the hon. baronet, that as regarded the Exhibition at Bury St. Edmunds, the Council were very much satisfied with it, although, as set out in the Report, there were several drawbacks. The weather was very bad, but at the same time the number of people that flocked to the Horticultural Show was so large, that a great deal of money was taken, and some £200 or £300 added to the funds of the Society. There having been a good profit there, it was thought by good management a similar show might be carried out at another place, and, with increased experience, at a less expenditure. The Council, therefore, did not hesitate to throw themselves in with the good people at Leicester, and there they were received with open arms. They (the Royal Horticultural Society), had made every preparation to carry out the Show, and the thanks of the Society were eminently due to one member of the Council, Mr. Brandreth Gibbs; and they believed it would be, and should be glad to see it, up to any show hitherto held [hear, hear]. The Leicester people have come forward in a very handsome manner. The Society had received a letter from there, which he (the Chairman) would read, and which would show the earnestness that was being thrown into the matter. The letter was as follows:—

"Leicester, 10th February, 1868.

"MY DEAR SIR,—We have a meeting to-day to receive the collecting books for special prizes for the Royal. The total amount to the present time is £225, and many books have yet to be returned. I intended to have sent a copy of the prizes by to-night's post, but the meeting lasted so long, and I find it will take some time to arrange, that I must defer it. Several of the collectors asked for more time. I told them that it was imperative that the Schedule should be issued at once. I intend having something for the *Chronicle* this week, to stir up our Nottinghamshire neighbours. I invited Mr. Lowe to be with us to-day, but he did not turn up, nor did he write. Messrs. Ingram, Sage, and Henderson gave us a good account. The guarantee fund is complete.—I remain, yours truly,

(Signed)

"James Richards, Esq., Royal Horticultural Society."

So that the Society would see that at the present time they had more prizes already than last year, and he (the Chairman), believed that the £225 spoken of in that letter would be largely augmented. As far as appeared to the Council, all the arrangements at present seemed

very satisfactory; but there was another letter, which he (the Chairman), would like to read to the Meeting, as it would show still further how well the affair was working. That letter was in the following terms:—

"Midland Railway, General Manager's Office, Derby,
10th February, 1868.

"SIR,—In reference to your letter of the 18th December, addressed to the Secretary, I have pleasure in informing you that in the case of plants, &c., intended for exhibition at the ensuing Show of the Royal Horticultural Society, the Midland Company will be able to afford the usual special facilities granted on such occasions—viz. the full ordinary rates to be charged to the Show, but the plants, &c., to be returned free, providing they remain the property of the sender.—I am, your obedient servant,

(Signed)

"JAMES ALLPORT, Manager."

"James Richards, Esq., Royal Horticultural Society, South Kensington."

All that showed a great desire on the part of those connected with the Show at Leicester in any way to make the visit of the Society as satisfactory as possible, and he (the Chairman), had no doubt it would tend to the production of horticultural exhibitions in other parts, which must do great good, for it would extend into the provinces a knowledge of many of the Society's finest plants; it would enlarge their sphere of usefulness, and increase their funds. He (the Chairman), should add that these Shows were held on the principle of taking an equal risk and dividing an equal share of the profits with the local Society. This course would be adopted at Leicester, so that the members would see the Local Committee were as much interested as the Horticultural Society themselves in promoting and extending the usefulness of the Show.

Mr. HENRY LIGGINS rose to make a few observations on the Report. They had had before them a report of considerable length, embracing many features, and there were also voluminous accounts. These he considered might very easily, and without any great stress of work upon the officials, have been circulated among the members some time before that meeting. That not having been done, he did not think they were in a position to criticise the accounts; and these ought not to have been put into their hands at that meeting for the first time, thus leaving them without the opportunity of perusing them. He thought that in future (and he was not placing the slightest opposition to the passing of the Report), the Report ought to be circulated a fortnight at least previous to the meeting. It was the practice at railway meetings to do so, and he thought it would be more satisfactory in their case. With regard to the money paid to their officers, he did not see a single reason in the world why they should not appear on the balance sheet. He should like to know what they paid their Secretary (Lieut.-Col. Scott, of the Royal Engineers), who might be in the room and yet had not the courtesy to read the Report, but placed it in the hands of the Assistant Secretary. The latter gentleman he always found doing arduous, important, and serviceable work for that Society. They wanted a man at the head of the department who was practical, and who should consider it his duty to attend the meetings and read the Report. For what he knew, the Council might have got the best man, but he (Mr. Liggins), did not know anything of him. They wanted to know whether he was skilled in horticulture, and whether he was skilled in general management. What were his avocations and salary? At present there was an unfavourable silence about them out of doors, and he felt he could not answer that silence. He should like to speak in the highest praise of every officer of the Society, and that was the reason why he asked his present questions. It behoved them to take care of their resources. They stood on a very precarious footing, and they should not allow themselves to be lax in their dealings, seeing that they were opposed so strongly by the Crystal Palace, the Botanic, and other Societies. They might find themselves in an unpleasant position with their great work at Chiswick, which, however, at present was in a state highly creditable to the Council, to whom they were also much indebted for the great diligence they had displayed in getting up those very charming afternoon meetings.

Mr. HENRY COLE, C.B., said he was not sure that they had had the advantage of the last speaker's presence before; but at all events he (Mr. Cole), had been present at a great many meetings of the Society, and if he was not mistaken he had never before seen him at the meetings, so that it was not surprising he (the last speaker) had not seen Colonel Scott.

Mr. LIGGINS.—I have been a Fellow for many years.

Mr. COLE did not know whether his observation was apt or not, but he was stating a fact that he did not know whether they had had the benefit of that gentleman's experience. He dared say if the last speaker had been present on other occasions he would have seen that they were following the ordinary precedent with respect to reading the Report; and within his (Mr. Cole's) experience, the Society's accounts had always been presented in the way they were now. He rather agreed with Mr. Liggins, that if they had not all been great conservatives it might have been expedient for them to issue the accounts before the meeting; but so long as he (Mr. Cole) was a member of the Council he should vote against any change in that respect. Mr. Liggins had objected to there being nothing in the accounts about the salary of Colonel Scott, of whom he very properly said he "knew nothing." They were asked why they took Colonel Scott as Secretary, and what was the stupendous salary they paid him. It was very desirable to have a gentleman who would pay a great deal of attention to his duties; and he also might consider, as probably Mr. Liggins

did, that paid services were much better than unpaid services. Mr. Liggins had considered it right to throw a slight upon their Secretary because he had left the reading of the Report to the Assistant Secretary. If his (the speaker's) memory was not bad, the Assistant Secretary had always read the Report, and he recollected that Dr. Lindley when Assistant Secretary always read it. Now, he would give a reason why their Secretary should not read the Report, and it was this—Colonel Scott had been doing them the favour of looking over their affairs, and they paid him nothing for doing so [applause]. They therefore had no right to call upon him to do anything. Of his own good will and competency Colonel Scott was prepared to do anything for them; and instead, therefore, of asking inquisitorial questions of "What duties did he discharge?" and "What amount of salary was he paid?" Mr. Liggins ought to have informed himself whether he *was* paid, and ascertaining the fact that he was paid, Mr. Liggins might then have been justified in asking how much. But it happened that Colonel Scott was paid nothing, and he did not think Mr. Liggins was entitled to ask any questions about the duties discharged. He (Mr. Cole) had no doubt that services to be responsible should be paid for. They had been asked why they had chosen Colonel Scott to fulfil the duties of Secretary. He answered, because Colonel Scott was the best man, and he was willing to give his services unpaid. Colonel Scott was a man of science and administrative ability. "The proof of the pudding is in the eating;" and he (Mr. Cole) did not hesitate to say that, long as the Royal Horticultural Society had been established it had never as favourable a balance sheet as at the present moment, and it was the first time in his recollection that the Society had cleared off a great deal of its liabilities. He was much obliged to Mr. Liggins for being inquisitive and giving him (Mr. Cole) an opportunity to vindicate the character of his friend. In the matter of elections they had followed the course adopted for a great number of years. Their Secretary was not a paid Secretary, and it had been the custom for years for the Assistant Secretary to read the Reports; and if they spent a fortnight in investigating the accounts he did not think they would be in a more satisfactory position than at present. He thought it would be sufficient to take the fact as it stood, that during the past year they had paid off £900 without incurring any liability [applause].

Mr. LIGGINS did not think it was right of a fellow "Fellow" [a laugh], to stigmatise his inquiries as "inquisitorial." He thought he had a right to ask questions; and really he knew no more about Colonel Scott than "the man in the moon." He (Mr. Liggins) had always found their Assistant Secretary a gentleman of intelligence, energy, and activity, and who was always at his work. He did not like honorary service; and he should like to have a paid secretary. He wanted a gentleman who was able to draw up a report; and he did not see any particular merit in the drawing-up of that Report. What he (Mr. Liggins) wanted was that the accounts should be furnished earlier, so that the members might see what was in them, and the same with the Report. It was no use telling him that things were as good as they used to be, he wanted them better than they were [hear, hear] even at present, and it was clear that others on his (Mr. Liggins's) side of the room adopted similar views. He remembered Dr. Lindley, who was a very able scientific man, giving lectures some twenty-five years ago, and he thought it was quite proper that he should have the assistance of a younger man to read; but, if he was not mistaken, he had heard their late Secretary read the Report. By his previous remarks he did not intend any offence, as he was entirely ignorant, and was simply asking for information; therefore he did not think it right for a member of the Council to say that he was impertinent.

The CHAIRMAN said they had never had a more efficient Secretary. Colonel Scott was a man of science, capable of mastering accounts, and thoroughly devoted to the advancement of horticulture.

Mr. BLENKINS had been present at nearly all the Committee Meetings, and he only knew their Secretary to be once absent from his post.

Mr. LIGGINS.—I do not know Colonel Scott; I never knew him, nor do I know any gentleman on the platform.

Mr. BLENKINS wished to say a few words respecting the report of the Chiswick Board. He observed that the Directors said "They would have desired to have effected something more than has been found possible in regard to the keeping of certain portions of the garden; but the labour rate at their disposal has proved insufficient for the purpose, and they therefore recommend a slight increase of expenditure under this head." He (Mr. Blenkins) had no doubt—indeed, there could be no doubt, they had all enjoyed their visits to Chiswick; but whenever they had done so they would not have failed to observe the quantity of waste land at the sides, which might have been brought into successful cultivation. He thought it was extremely desirable when the finances of the Society were better, that something more should be given to the support of Chiswick Garden. They would be glad to see that waste land cultivated, and they would find it to be a remunerative step. He saw the revenue was greater than on former occasions, and he thought a few hundred pounds spent on the waste land that was now perfectly unproductive, would bring in a good amount of funds to the Society. These who made periodical visits to Chiswick Gardens would appreciate the advantages of such a step, and he therefore trusted that the recommendations of the Chiswick Board would receive the support they deserved.

The CHAIRMAN said as far as their means went they would endeavour

to carry out the recommendations of the Chiswick Board. They, as a Horticultural Society, would not be able to carry out their labours without Chiswick, and the more money they expended on Chiswick the more they would advance horticulture. He should be glad to see them have the means at their command to do so. If they were successful (and their funds were gradually increasing, so that they would have more at their command), he thought the Council would put to the Chiswick account more than ever.

Mr. EDGAR BOWRING, C.B., was anxious to say a few words as to the admirable way in which the duties of Secretary were fulfilled by Colonel Scott, although he (Mr. Edgar Bowring), could not go quite the length of some previous speakers, implying that the gallant Colonel was the best Secretary they ever had, for he remembered the able tenure of that office by their esteemed friend and Chairman, Mr. Wilson Saunders [hear, hear]; but that the duties were most efficiently performed by Colonel Scott no one could for a moment doubt. He (Mr. Edgar Bowring), was glad to be able to speak of the amicable arrangement that had been come to with the International Horticultural Committee, and the satisfactory proceedings which had resulted, but had hardly seemed probable. Both parties had done him the honour to invite him to attend, *amiciis curis*, in which capacity his first advice was to let bygones be bygones. All agreeing in that spirit, the upshot had been the investment of the balance of £1850, which had been devoted to the purchase of the library, which he said would prove of the greatest possible service to the Horticultural Society. It had been invested in trustees, and would remain their property as long as the Horticultural Society remained tenants of their present grounds. He hoped they would have its contents added to by gifts and bequests. Referring to the accounts, he did not see any balance in their favour, but they had got off a great deal of debt. Their receipts had been influenced by the doubtful weather and the continued effects of the financial panic. He trusted that their future financial position would be satisfactory. He presumed the Council had not been able clearly to see their way whereby the debenture-holders at 4 per cent. could be altered in favour of the Society by giving more free admissions; but he (Mr. Edgar Bowring), had no doubt that if anything could be done it would [hear, hear]. The only item of expenditure that he took exception to was that for repairs, which he considered a good deal too small, and they might depend upon it that if they did not keep up their repairs their negligence would find them out some day. He might remark, adverting to some observations by a prior speaker, that according to their bye-laws, the accounts were to be ready a week before the day of meeting, when any gentleman, by applying, could have a copy of them supplied to him.

The CHAIRMAN said the sending-out to the members a copy of the accounts before the meeting would be taken under the consideration of the Council.

Major TREVOR CLARKE in referring to what fell from Mr. Liggins, said he had no doubt that gentleman had spoken in honest ignorance of what Colonel Scott had done for the Society; but when allusion was made to a certain number of persons behind him having a fellow feeling, he (Major Clarke), would say that the vast majority of that Society knew Colonel Scott very well, and they would endorse the opinion that the Society were much indebted to Colonel Scott for the financial and social position they enjoyed, and they must feel convinced that he had saved the Society a great deal [applause].

Mr. LIGGINS would merely observe that there could be no difficulty in the accounts and Report being sent to the members, as they were ready, it now appeared, a week before the meeting.

Mr. MURRAY.—It was purely a question of expense of postage, and whether it was necessary.

The Secretaries then delivered in the balloting papers, and the list of officers declared to be elected for the ensuing year is as follows:—President, His Grace the Duke of Buccleuch; Treasurer, Mr. John Clutton; Secretary, Lieut.-Col. Scott, R.F.; Expenses Committee-men, Mr. John Clutton, Lieut.-Col. Scott, R.F., and Mr. Henry Cole, C.B.; Auditors, Mr. James Nicholson, Mr. John Gibson, and Mr. Robert Hudson, F.R.S.

The retiring members of Council being Viscount Sandon, Mr. Wentworth W. Buller, and the Rev. Joshua Dix, the gentlemen elected to succeed were Mr. John Clutton, Mr. J. Russell Reeves, F.R.S., and Mr. William Marshall, of Enfield.

Mr. LIGGINS having seconded the motion for the adoption of the Report, it was carried unanimously.

Mr. LIGGINS then said he had much pleasure in proposing a vote of thanks to the Chairman, Council, and Lieut.-Colonel Scott, the Secretary [cheers], for the advantages which the Fellows had derived from their services.

Captain DOWNMAN seconded the motion, which was carried by acclamation.

The CHAIRMAN, in acknowledging the compliment, said he believed the interests of the Society were well cared for by the Council, who spared no trouble to fulfil their duties.

The business of the Meeting then terminated.

REPORT OF THE COUNCIL TO THE GENERAL MEETING.

1. The Council is happy to be able to make, on the whole, a satisfactory Report to the Fellows of the present state and future prospects of the Society. The subscriptions received from Fellows during the

past year amount to £8027, as compared with £8176 in 1866, £7975 in 1865, and £7840 in 1864. One gratifying sign of growing confidence in the future of the Society is the fact of twenty-five old Fellows of the Society, who had resigned, having again become members.

2. A new and most legitimate and promising source of future income has also been opened, while a wider sphere has at the same time been given to the operations of the Society. The Exhibition at Bury St. Edmunds, which was announced in last year's Report, has more than answered the most sanguine expectations of its promoters. In spite of unpropitious weather, it proved not only eminently successful as a Horticultural Exhibition, but also as a financial speculation. The Council confidently anticipates a still more decided success from the Show which it is proposed to hold this year at Leicester; for there is no reason to doubt that the interest, great as it was, which was taken in the success of their Show by the horticulturists of Bury St. Edmunds and its neighbourhood will be at least equalled at Leicester, while the population of the latter town is very much greater. The deputations which was sent by the Society to make the necessary arrangements there met, moreover, with the most gratifying assurances of support; a guarantee fund was raised in the town without any difficulty, and special prizes to a large amount have already been promised. The Autumnal Provincial Shows thus bid fair to become one of the most effectual and popular means of furthering the objects for which the Society is incorporated; and, while they may be expected to add considerably to the funds of the Society, will tend to encourage and promote the study and love of horticulture throughout the country.

3. The Council refer also with the most lively satisfaction to another evidence of the increasing usefulness and spreading influence of the Society. There are now no less than fifty-two Floricultural and Horticultural Societies in union, and of these twenty-four joined during the past year.

4. The accounts of the Society, which have been placed in the hands of the Fellows, will further show that the Council did not take too hopeful a view of the affairs of the Society when at this time last year they expressed the opinion that, though requiring strict economy, its affairs were in an encouraging position; notwithstanding all the drawbacks arising from the serious monetary depression of the last two years, it will be seen that its revenue for 1867 has considerably exceeded the outlay necessary to carry on its work. The only items on which the Council have permitted any increase of expenditure over that of former years are those relating to Chiswick Garden; and the Fellows will observe that the Chiswick Board state in the annexed Report that, even with this increase, more funds are wanted to bring the Society's working at that place into full efficiency. The Council, therefore, in the belief that a judicious outlay in the manner suggested in the Report alluded to will result in increased produce, as well as increase of general usefulness, have made some further additions to the Chiswick labour item for this year.

5. The labours at Chiswick during the past season have met with much success. M. Bausé, the foreman of the Floral Department, has succeeded in the production of an entirely new race of golden-leaved Caladiums; and in the Pomological Department many interesting trials of varieties of Fruits and Vegetables have been carried out, including one of a valuable collection of Figs. The Fellows are referred to the Report of the Chiswick Board of Direction for fuller information on these subjects, and their attention is particularly called to the request of the Board that any Fellows of the Society who may possess uncommon and attractive species of hardy herbaceous perennials will aid the Chiswick collection of plants of this character by contributions of such as they can spare, or by gifts of seeds.

6. The Council call attention to the annexed Report of the Examinations in Horticulture for the past year. The success of the Chiswick students is particularly gratifying; and the Council have now, in compliance with the recommendation of the Horticultural Directors, arranged for providing a few Lectures and Demonstrations in aid of the practical studies of these young men.

7. The Meetings of the Fruit and Floral Committees have been as usual very well attended during the past season, and the Council have reason to believe that the valuable labours of the gentlemen composing these Committees greatly influence the progress of Horticulture throughout the country. The Afternoon General Meetings, also, which follow the Committee Meetings, have been most successful, both as respects the appreciation of them by the Fellows and the subjects which have been discussed. The results of the various Meetings and Exhibitions of the Society will appear in the forthcoming number of the Journal, edited by the Rev. M. J. Berkeley.

8. The four days' Show of June last, held in the Great Tent, was a great success in a Horticultural point of view. Various opinions for and against the continuance of a Show beyond the first or second day have been offered; but as yet the Council see no reason to regret that they have made the experiment, and they propose to repeat it this year. The Exhibition of June last was indeed continued for a whole week, the greater number of the Exhibitors having at once (in many cases at considerable inconvenience), acceded to the Council's wish to have it kept open on the Whit Monday. The Council have also added a second day to the Special Prize Show. The only other alteration of the last year's programme is the breaking-up of the two Spring Shows into three, with a slight addition to the total amount offered in prizes. The charming fortnight's Show of Spring Flowers will be re-

peated on an increased scale. The Society is under great obligations to Mr. W. Paul for the spirit and energy he displayed in this Exhibition, which has now become so prized a feature of the Society's yearly arrangements. Messrs. Lane & Son, Berkhamstead, will also make an Exhibition in the Arcades of their Plants and Flowers during the month of April; and Messrs. Waterer & Godfrey's Exhibition of Rhododendrons, discontinued last year in consequence of the damage done by the severe frosts, will, the Council hope, again be counted this year among the attractions of the Gardens.

9. The Council have, in former Reports, made known to the Fellows that the Exhibitions of the Society are no longer a source of income as formerly, but now involve a considerable loss. Each season renders a recovery from this condition of things more unlikely. The expenditure on last year's Exhibitions was £1727 18s. 3d.; the receipts only £1102 7s. 6d. It is manifest, therefore, that the Society must proceed with caution in again attempting any increase in their number. Nevertheless, the Council think very well of the proposition that has been made to them to add to their programme some small Shows of special subjects, which would otherwise escape competition, owing to their time of flowering not coinciding with the London season; and they will be quite prepared to give facilities for holding such minor Shows as may appear to have interest for a sufficient number of cultivators and admirers to give a probability of success. The best test of such interest would be a proposition on the part of horticulturists to make special Shows, as has already been done by the cultivators and admirers of Zonal Pelargoniums. The Zonal Pelargonium Show of last season, will this year have grown into a very important Exhibition.

10. The Committee of the International Horticultural Exhibition have generously applied the whole of their remaining surplus funds to the acquisition of a Library, to be held in trust for the use of the Society. The only condition annexed is one which the Council are very glad to accede to—viz, that the Library, under proper restrictions, shall be open for consultation to all Horticulturists and Students who may wish to refer to it. The Trustees consist of three officers of the Committee and three officers of the Council, who are to appoint a seventh member. The arrangements of the Board include the purchase from the Society of the Lindley Library. This Library, and also a collection of works the property of the Society, will shortly be placed in the Council Room.

11. In their Report, presented in the year 1866, the Council made allusion to the contemplated erection of the Royal Albert Hall of Arts and Sciences, as likely to add an additional attraction to the gardens of the Society. During the past year the foundation stone of the building was laid by Her Most Gracious Majesty the Queen, and its walls are now fast rising. The Council are making arrangements with the Provisional Committee of that undertaking, from which mutual advantages will be derived. These arrangements will include convenient access to the Hall from the Society's Conservatory.

12. In conclusion, the Council have pleasure in announcing that the claim put forward by them for the recognition of the important services to Horticulture of the old and valued officer of the Society, Mr. Thompson, has resulted in a subscription which at present amounts to £360. Some account of his labours, and a list of the subscribers, were given in the Proceedings of the Society issued last month.

REPORT TO THE COUNCIL FROM THE CHISWICK BOARD OF DIRECTORS. DECEMBER 1867.

1. The Directors have the satisfaction of reporting that the Chiswick Garden has been thoroughly utilised during the past season, and that the cultural results, under the efficient superintendence of Mr. Barron, have been fully equal to those of former years. They would have desired to have effected something more than has been found possible in regard to the keeping of certain portions of the garden, but the labour rate at their disposal has proved insufficient for the purpose, and they therefore recommend a slight increase of expenditure under this head.

2. The experiment which has been made with reference to the employment of Students for the performance of a portion of the work of the garden has, so far fairly answered the expectations of its promoters; and the Directors, but for the outlay involved, would willingly extend it, so as to offer its advantages to a larger number of young men anxious to use the best means of advancing themselves in their profession. They, however, having past experience in view, think it would be advantageous to provide for the entry of somewhat younger men than the present regulations will admit. They also think that a few Lectures and Demonstrations in aid of the practical studies of these young men, such as were originally contemplated, would now prove a valuable aid to them.

3. The Directors trust that the Society may rely on a continuance of the aid which has been so generously and efficiently afforded to the Chiswick collection by those gentlemen who have obligingly contributed novelties for the various trial collections, since they believe that these experimental trials have more effectually and widely diffused a correct knowledge of the recent acquisitions for the Flower, Fruit, and Vegetable gardens than could have been brought about by any other ready means. They are highly gratified to be able to state that these trial collections, and the standard sorts grown for comparison with them, are sought for with much interest by numerous visitors at the proper season.

4. As regards the Floral Department, some new houses have been completed, and others efficiently repaired, so that the Superintendent has now better accommodation than formerly for growing flowering plants, the chief demand for which is to aid in the decoration of the conservatory at Kensington throughout the year. With this latter object in view, various additions have been made to the collections of stove and greenhouse plants.

5. During the past year, 7571 plants have been grown for distribution to the Fellows by ballot, and 125,512 packets of vegetable and flower seeds have been also made up and distributed; besides 1714 plants and 12,512 packets of seeds which have been sent out to the various Societies in union.

6. The provision of material for the decoration of the garden at South Kensington has been greatly extended, and has correspondingly increased the expenditure at this establishment, both as regards labour and glass accommodation. No less than 15,227 plants thus reared have been contributed by Chiswick for this purpose during the present year.

7. In addition to the plants referred to in the foregoing paragraphs, 927 varieties of plants, old and new, such as Pelargoniums, Verbenas, Tropaeolums, Calceolarias, &c., have been grown for judicial examination by the Floral Committee. The groups of the older kinds, grown as standards for comparison, were very attractive in their season; but the newer varieties have been less successful, owing chiefly to two causes—the late date and weakly condition in which, in too many cases, the plants are received, and the unpropitious weather of the past summer. It is hoped that in future the plants may be obtained earlier in the season, in better condition, and that more extended and useful results may be obtained.

8. Attention has been given to Hybridising, and the rearing of novelties for the use of the Fellows; and the Directors are highly gratified to be able to report that M. Baume, the foreman of the Floral Department has won for himself the credit of having produced an entirely new race of golden-leaved Caladiums. A very large number of hybridised Caladiums has been reared, showing great variety in the colouring and marking of the leaves, and including amongst them several highly ornamental novelties; but the production of the golden-leaved forms (which include some three or four distinct variations), has been the most marked instance of success. Besides these, some promising Variegated Zonal Pelargoniums have been obtained; as well as a crop of hybridised forms of Coleus, and of some other plants, which, however, are not as yet sufficiently developed to show whether any improvement has been gained.

9. Sympathising heartily with the expressions of regret which are frequently heard as to the neglect into which hardy herbaceous perennials have been allowed to fall, to the curtailment of the bounty and interest of English flower gardens, the Directors have set about the formation of a collection of these plants, with the view to revive the taste for them, by facilitating the selection of those best adapted for particular seasons and particular situations. To this end, they hope to secure examples of all the more ornamental and really interesting species. As plants of this character are frequently preserved in country gardens after they disappear from general cultivation, and thus become difficult of access, the Directors trust that the Council will urge upon any Fellows of the Society who may possess uncommon and attractive species the advisability of adding to the Chiswick collection, or contributing plants or seed of any such which they can spare. The Directors anticipate that much interest will be excited by this collection, and that it may induce many Fellows to introduce into these Gardens that much-maligned institution, "the mixed border," from which, however, they feel satisfied that a large amount of interest may be derived by the lovers of flowers.

10. A collection of subterranean plants has been brought together, and during summer forms a very interesting feature along one of the principal walks in the garden.

11. In the Pomological Department, the Board have to report that, by the removal of the house from South Kensington to Chiswick last spring, the valuable collection of Figs has been properly accommodated, and almost the whole of the variety are in full bearing. During the past season several new and excellent varieties have been discovered, and numerous synonyms have been detected. A report on the varieties which have fruited is in preparation.

The collection of Strawberries, to which reference was made in last year's report, as having recently been acquired and planted, is now in a most satisfactory condition. Last summer the greater number of the varieties produced fruit, but as it is anticipated that from the vigorous condition of the plants and the encouraging prospects for next summer, the whole will then be in bearing, it will be better to make a report on the whole after comparing them with each other and ascertaining their relative merits.

12. During the past year the Board instituted a trial of all the varieties of Grapes that are included under the group of Chasselas. These were grown in pots in a heated pit, but the experiment was not sufficiently successful to warrant a report being made on the various varieties forming the collection. It is, however, intended to repeat the experiment next summer.

13. A trial of all the varieties of garden Peas, as highly successful, and tended to the acquisition of much valuable information relating to the different varieties, and especially to those of recent introduction. The same success attended the trials of Broadbeans.

and Lettuce. On all of these subjects complete reports have been prepared.

14. Another of the most important functions of the Chiswick Garden has been liberally worked in the distribution of grafts of fruit trees, of which no less than 1,500 parcels have been received by Fellows of the Society during the past season.

15. The demolition of the old and diseased fruit trees which occupied some of the belts in the kitchen garden having been attended with beneficial results to the garden, the Board would suggest to the Council that the greater portion of the old orchard of unproductive standard trees should be trenched over; and the ground appropriated to the reception of the young trees raised from scions of those which had been destroyed, along with others forming a numerous collection which have been obtained at various times from the pomologists of the continent of Europe and the United States of America. These old orchard trees, as they at present exist, are perfectly worthless, and occupy a large extent of ground, which is thereby rendered unproductive. If this were done, not only would there be room for the young plantation of pyramidal and bush fruit trees, but space available also for the production of vegetables and the more common fruits for which there is an increasing demand by the Fellows; while there is less inquiry for Grapes and the higher class of fruits.

16. The Peach wall, which at one time was the pride of the garden, has for some years been gradually losing its interest; the trees, many of which are equal with the wall itself, having fallen into the decrepitude of age, and occupy space which might be more serviceably employed. The Board would suggest that these old trees be removed, and their places filled with young trees of choice varieties, which will serve not only as a source of income by the sale of the fruit, but as examples of the different methods of training and the most approved modes of pruning wall-fruit trees. As the trees at present exist, they afford no instruction in this latter respect; and it is most important in an establishment like the garden of the Society, in which experimental and educational purposes form so important a feature, that the training and pruning of fruit trees should be on the most approved and modern principles.

EXTRACT FROM THE REPORT OF THE POMOLOGICAL EXAMINER

The examinations of gardeners as candidates for the Society's certificates, which were commenced in 1866, have been continued during the past year with the most satisfactory results. One of these took place at Midsomerham last, when seven candidates presented themselves, six of them being students at the Society's garden at Chiswick, and one from Battersea Park. Of the former, three took second class in fruit and vegetable culture, one a third, and two were unsuccessful.

At the examination in December last the number who presented themselves had risen to fifteen, and this shows the growing popularity of these examinations. In this case six of the candidates were Chiswick students, four were from Kew, and the remaining five from various gardens throughout the country. Of these, two (Chiswick students), took first class in fruit and vegetable culture, five took extra seconds, three seconds, three thirds, while the remaining two did not pass.

The marked improvement that the Chiswick students exhibit at the successive examinations shows that, as a school for horticulture, Chiswick supplies all the requirements necessary for that purpose; and the steady progress that the young men have made who entered the school when it was instituted is an evidence of the earnestness of purpose with which they are actuated, as well as a proof that the instruction communicated is of such a character as to enable the young man to take a high position in the gardening world.

I have to observe with pleasure that the great national establishment at Kew has sent up so large a proportion of the candidates at the last examination, and that the endeavour of the Society to establish a sound horticultural education is so well seconded by the authorities of that establishment. It is very desirable that not only in all public, but in all private establishments where young men show indications of ability and a desire to distinguish themselves, the heads will use their influence to induce the young men to prepare for these examinations, thereby affording them a stimulus which cannot fail to operate for their advantage. The establishments from which the other young men have come up are, the gardens of the Royal Botanic Society, Regent's Park; Battersea Park; Earl of Abercromby's, at Bridge Castle; Berham, Park, Newham; and Court Yard, Eltham, Kent.

EXTRACT FROM THE REPORT OF THE EXAMINER IN FLORICULTURE.

In the department of Floriculture the students have shown that they possess a very satisfactory amount of practical information. Their answers generally indicate an intelligent, and in some cases a thorough and intimate acquaintance with the subject propounded, especially if it be of a practical nature. Experience has shown that questions on practical subjects are more fully and clearly responded to than those which have a more scientific bearing. Thus, for example, it is found that a more complete answer will be given as to the mode of treating any particular plant or family than when the question relates to such points as an enumeration of the species or that particular family, or the popular features of difference between them. While it is thus gratifying to be able to report that these young men are acquiring a good practical knowledge of this branch of their profession, which will fit them hereafter to occupy situations where such knowledge would be called for and necessary, it is to be regretted that it would

be well for them also in their youth to master as far as possible the elements of theoretical horticulture.

STATEMENT OF ACCOUNTS from 1st January to 31st December, 1867.

RECEIPTS.		£	s.	d.	£	s.	d.
To Life Compositions		585	4	0			
" Admission Fees		266	14	0			
" Annual Subscriptions		8,027	12	0			
" Garden Produce and Charges		648	9	0			
" Daily Admissions and Promenades		421	0	0			
" Rent of space in Arcades		327	4	0			
" Exhibitions and Fairs		1,429	5	6			
" Exhibition at Bury St. Edmunds		1,316	17	6			
" Advertisements in Journal		68	4	3			
" Special Prizes		42	0	0			
" Miscellaneous		63	1	7			
" Chiswick Miscellaneous		11	6	0			
					33,326	17	10
						373	0 11
Total					33,699	18	9

*Assets. Subscriptions due, but unpaid	£130	5	0
Garden Produce unpaid	120	0	6

EXPENDITURE.		£	s.	d.	£	s.	d.
By Balance from 1866					203	17	7
By Chiswick Garden Expenses, viz.:							
Rent, Rates, and Taxes	304	15	7				
Labour	1,400	14	3				
Implements, Manure, Coals, and Coke	203	15	0				
Repairs	96	17	3				
Trees, Plants, Seeds, &c.	28	7	0				
Miscellaneous	73	16	3				
					2,387	5	2

By Expenses of Management, viz.:							
Salaries	487	4	10				
Printing and Stationery (Almanacs, &c.)	160	5	7				
Journal	134	16	5				
Fruit and Floral Committee	49	13	6				
Foreign Importations	19	8	0				
Examination of Gardeners	20	0	0				
Postages	71	4	8				
Distribution of Seeds and Plants	213	0	0				
Reading-Room	28	7	5				
Gas	37	10	3				
Horticultural Directors	350	14	4				
Wages	242	13	2				
Miscellaneous	73	8	1				
					1,998	4	3

By Expenses of Exhibitions, viz.:							
Advertising and Posting	239	17	9				
Prizes and Medals	1,055	12	8				
Bands	499	7	0				
Judges' Fees, Lunches, Labour and Sundries	273	16	10				
					2,063	14	3

Expenses of Permanent Exhibition							
By Provincial Exhibition at Bury St. Edmunds:							
General Expenses, Advertising, &c.	230	13	5				
Judges' Fees, Lunches, and Labour	357	12	2				
Bands	85	4	6				
Prizes	336	8	6				
Half-Profits to Guarantors (say)	200	0	0				
					1,209	18	7

By Kensington Garden Expenses, viz.:							
Labour	805	3	8				
Rent, Rates, Taxes, and Insurance	878	5	3				
Engineer	31	2	2				
Repairs	302	11	10				
Water	41	16	4				
Implements, Manure, Coals and Coke	133	17	7				
Gravel	7	16	0				
Trees, Plants, Seeds, &c.	74	6	5				
Superintendent's Salary	200	0	0				
Miscellaneous	50	1	10				
					2,526	1	1

Conversationsi	188	14	11				
By Special Prizes	42	0	10				
By Interest on Debentures	1,951	18	10				
By Liabilities of 1865 paid off	716	6	6				
By Liabilities on Current Account	300	0	0				
					413,693	18	9

2nd February, 1868.

Examined and found correct.

JOHN GIBSON, } Auditors.
ROBERT HUDSON, }

CUPRESSUS MACROCARPA AND OTHER CONIFERS.

I AM glad to be able to give Mr. Robson and your other readers a favourable account of *Cupressus macrocarpa*. There are two specimens of it here, one of which is 41 feet high, and in point of symmetry is all that could be desired. The frost of January, 1867, did not harm them in the least, while *Taxodium sempervirens*, 50 feet high, growing a few yards off, was much injured. *Cryptomeria japonica* at a short distance from

them was slightly injured, but has now recovered. *Pinus insignis* still exhibits a reddish brown tinge; but a fine specimen of *Thuja Lobbi*, 22 feet high (I have been told by nurserymen who have seen it that it is the finest they had ever met with), did not suffer in the least. *Araucaria imbricata*, 25 feet 8 inches high, growing on higher ground a little way off, had the bottom branches somewhat injured. *Picea pinsapo*, 19 feet high, and covering an area 39 feet in circumference, was unhurt; and on high ground and in a very exposed situation, *Wellingtonia gigantea*, 20 feet high, and with a stem measuring at the base 5 feet 8 inches in girth, was likewise uninjured. *Cupressus Lawsoniana*, 14 feet high, *Thuja borealis*, 12 feet high, *Picea nobilis*, and *P. Nordmanniana* were uninjured; and our *Retinospora pisifera aurea* and *R. lycopodioides* were injured at the points. *Thuja dolabrata variegata* was hurt a little.

The situation is considerably exposed to winds from the east and west, and more injury is done by wind than frost. Last week a fine *Cedrus deodara* had 2 feet of the leader broken off. I think *C. macrocarpa* is safe here, having withstood the winters of 1860-61 and 1866-67 uninjured. It is a beautiful tree, and succeeds well here. The soil is heavy, on a hard, red, marly subsoil.—J. G., *Garrison's Castle, Herefordshire*.

ARNOTT'S STOVE.

I THANK "R. F." for his practical review of my article on Arnott's stoves. Criticism and comment when prompted solely by a desire for increased information seldom fail in their object. With this motive ever in view, the pointing out the weak parts of a proposition is the soundest mode of adding strength to it, and if its weakness is so great that it cannot stand the test, the service rendered is equally useful. On a field of ice safety is best insured by breaking in the weak parts. In this case the issue is a sheet of iron instead of a sheet of ice.

When I sent the section and elevation (see page 28) of the stove, I had no idea that the Editors would have them engraved. I sent them merely for comparison with the written description of the stove, and was not quite so accurate in my drawings as I might have been. The section shows too much sand, and withal is not engraved in exact accordance with the drawing sent. The sheet-iron arch is moveable, and simply rests on the edge of the firebricks. A new piece of sheet iron has just been put in the stove. The old piece had been in use seven or eight years.

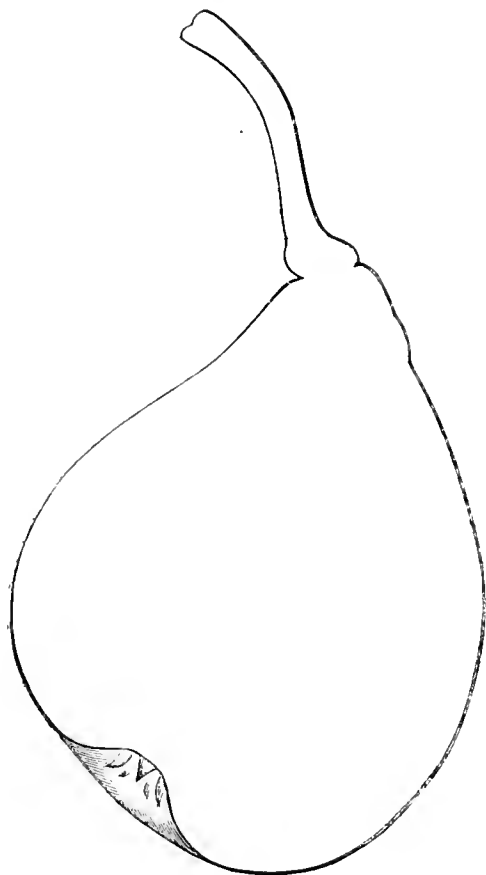
The stove in another viney is somewhat different from that just referred to. Inside, and 2 inches from the top of the sheet-iron case which encloses the stove, is a lip or flange, half an inch wide, on this rests a flat square of sheet iron, which may be termed a false top. This 2-inch space is filled with sand, and the cast-iron or top proper of the stove rests on the sand, fitting tightly over the top of the case. There is not the slightest escape of smoke here. The firebricks being only carried upwards 18 inches there remains about a foot of the sheet-iron casing which would be exposed to the action of the fire; but this is shielded by another piece, which is bent from just underneath the lip which supports the false top of the stove to the inner edge of the firebricks, simply enclosing so much air. This shield has not to my knowledge been replaced since the stove was put up twenty-five years ago. In less than five minutes after the stove is lighted, the upper part of it is quite hot, and, indeed, continues so long after the fire has gone out, from the naturally ascending heat from the firebricks being enclosed in the space between the outer case of the stove and the sheet-iron shield. Thus the heat from the outer wall and the top of the firebricks has no direct outlet to the chimney. This stove is only used to give sufficient heat to exclude frost in winter, to dispel damp, and to ripen the wood of the vines in autumn. The square of sheet iron on the top of the stove has not been replaced for at least fourteen years, and it is now sound. The greater or less perishability of the sheet iron exposed to the fire, doubtless, depends to a great extent on the quality of coke used as fuel. Here it is very good. In constructing a stove certain modifications may suggest themselves to those interested. The firebricks, or what are preferable, fire "logs," moulded about 2 inches in thickness, may be taken the entire height of the stove, and a square "log" put over the top. This stove is the same size, and the house in which it is placed is of the same dimensions as that figured in page 28. The stove also occupies the same position in the house, and is quite large enough for its work. To ripen Grapes in July, a larger stove would be preferable. It is easy to calculate proportions to any extent on the data given. The back wall

certainly not the best position against which to place a stove, so far as the equal and economical diffusion of heat is concerned.

Much depends on the construction of the house, as to where the stove is placed. To say that it answers well in a bad position, is to say that it would answer better in a good one. A long horizontal pipe must, however, be avoided, or the pernicious products of combustion will not escape freely. An important point to be attended to in construction, is to make the stove air-tight. No air should find its way to the fire except at will, and through the ventilator in the ashbox door. The ventilator then serves the purpose of a damper. For five or ten minutes after the fire is lighted, to insure quick ignition of the coke, the door is left quite open; there is then a corresponding escape of heat up the chimney. The coke once well alight, and the ventilator duly regulated, the bricks will absorb the heat, which is again extracted by the atmosphere of the house, and the pipe above the stove will gradually cool to a lower degree than the stove itself. The ventilator thus acts efficiently as a damper. My experience is the same in substance as "I. F.'s," and from what has been written there can be no difficulty in constructing a stove to act admirably and economically. I may add that economy was not necessarily the object of the proprietor in adopting this mode of heating. He had thought much on the subject, and saw his way clearly that it would answer. Prognostications of failure were made by gardeners and others, and in order to determine whether they or himself were right, the stoves were and are retained. Twenty-five-years trial has proved him right. The system has answered well.—J. W.

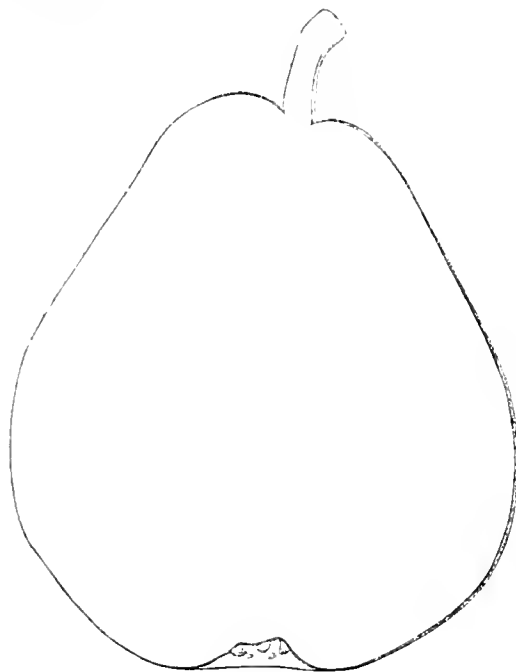
PEARS.

8. ADELE LANCELOT.—A seedling raised by M. Van Mons, but not brought out until after his decease. Not superior. Ripe in October and November.—(*Hogg's Fruit Manual*, 237.)



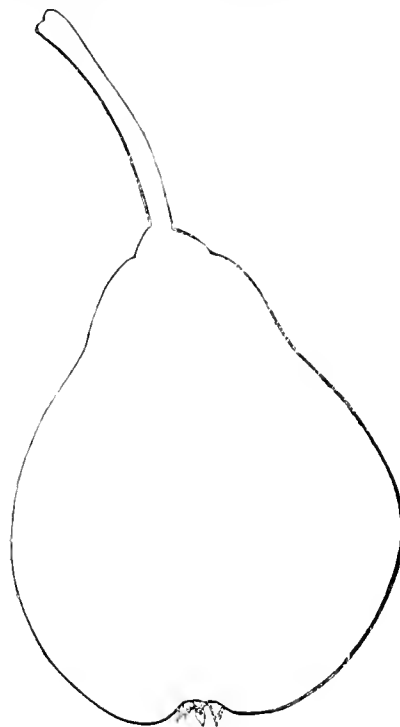
8. Adele Lancelot.

9. ADELE DE ST. DENIS.—Of good quality, and ripe from early in October until early in November.—(*Hogg's Fruit Manual*, 238.)



9. Adele de St. Denis.

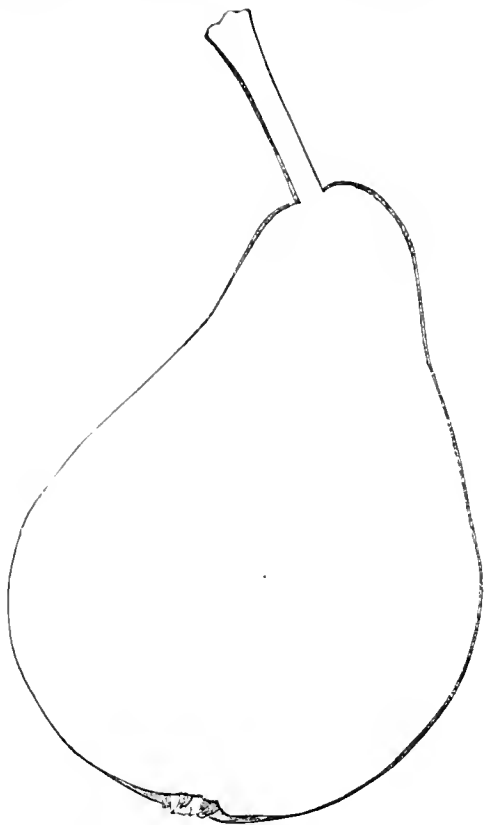
10. AH! MON DIEU.—Its original name, *Belle fertile*, is appropriate and unobjectionable, and that now applied ought not to be tolerated. It is said to have been bestowed because Louis XIV., when he saw the superabundant crop it bore, ex-



10. Ah! Mon Dieu.

claimed, "Ah! mon Dieu." Ripe in September, but does not continue good longer than a fortnight.—(*Hogg's Fruit Manual*, 238.)

11. AMANDINE DE ROUEN.—Fruit medium-sized, $3\frac{1}{2}$ inches long, and $2\frac{1}{4}$ wide, pyriform, rounded towards the eye, and tapering towards the stalk. Skin at first of a bright green colour, dotted with grey, but changing to lemon colour as it ripens. Eye half open, with small, stout, often blunted segments, and placed on a level with the surface of the fruit.



11. Amandine de Rouen.

Stalk about an inch long, slender, woody, and firm, obliquely inserted on the apex of the fruit. Flesh fine-grained, very juicy, and melting, with a rich sugary flavour.

An excellent and rather richly-flavoured Pear, ripe in the end of September and beginning of October, but not superior to many in season at the same period.

It was raised by M. Boishunel, a nurseryman at Rouen, from seed sown in 1846, and the tree first fruited in 1857.

MISTLETOE ON THE OAK AND POPLAR.

PERMIT me to inform your correspondent, Mr. Robson, and your readers generally, that there is growing in the park here a large Oak tree, on the thick branches of which there are several pieces of the above-named parasite.

The tree in question had several limbs blown off about four months ago, on which were some pieces of Mistletoe. I also noticed some young shoots, apparently of one season's growth.

I may add that there are quantities of Mistletoe growing on old Hawthorn trees close by the Oak referred to; and although there are other Oak trees whose branches nearly touch that on which the Mistletoe is growing, I have failed to discover the parasite on any but the first-mentioned tree.—H. J. CLAYTON, *Hackwood Park, Basingstoke.*

[In the rectory house of Ashley, in Buckinghamshire, lives a rector, genial and pomological, qualities when combined rendering a man irresistible. The said rector tries many experiments, and among them on the Mistletoe. His details of some of the results are in the following extract from one of his letters to one also genial and fond of asking questions of Nature.]

"My Mistletoe is certainly a most extraordinary specimen.

There are fifty-three bunches, varying in size from 18 inches to 7 or 8 inches in diameter, and thirty-seven others about an inch, and half an inch long in their shoot, now starting in different points of the Poplar. The same answer you received from Professor Lindley, or one very like it, Professor Paulsen gave to me, when I mentioned to him the circumstance of the Mistletoe breaking out in so many places on the tree (they then numbered forty-six). He said, 'Oh, yes, deposited by birds.' I replied, 'No, Dr. Daubeny, had it been so I should not have troubled you on the subject.' The fact is, the young plants for the most part show themselves underneath the branches of the tree. No birds could place a seed there. I have never been in counties where the Mistletoe is very abundant. It may break out more or less on Thorns and Apple or Crab trees there. Some few years since, Mr. Adams, a clergyman in Warwickshire, sent to the *Times* a description of a Mistletoe growing on one of his Apple trees. He thought it wonderful that he could count some fourteen distinct plants. What would he say to my specimen?

"Directly opposite my Poplar, about 15 yards distant, is another plant growing on the same sort of Poplar. This is a male. The seed was rubbed on at the same time with the other. I mean the same day. The lower branches growing in the neighbourhood of this plant I cut off, and there is no branch within 4 or 5 feet of it. This bunch of Mistletoe, though of twenty-years growth, is not larger, or so large, as the finest plant on the other tree. The seed was rubbed on the north side of the tree. I rather think I rubbed two on. I certainly did this on my wonderful specimen tree, one seed east, the other west. I allowed the lateral branches of this tree to remain, and it is on these that the Mistletoe is playing such pranks.

"You will be glad to hear the tree is healthy, while the other one gives signs of decay. This may be owing to locality. It is closely surrounded by evergreen trees and shrubs, such as Firs, Arbor Vitæ, Portugal Laurel, &c. I keep the latter cut back so as not to conceal the Mistletoe growing upon the Poplar. On my grand tree there are male plants mingled with female; at least, there are those which produce no berries, and as they are of considerable dimensions, I conclude from their giving no fruit that they are male plants.

"It is somewhat curious that I have rubbed some hundreds of berries from my finest bunches on Thorns and Apple trees, but have failed in getting them to grow. I have succeeded only on three Whitethorns. Thousands of seeds have I given away, but still I only know of one instance in which a plant has appeared. Last year I rubbed seed in each month from January to April, and even May. I shall repeat the experiment again this year. Can there be any imperfection in the fruit, think you? I have a few fruit on a Thorn, I shall try these, as well as the fruit from the Poplar. In point of size there is no difference. Both are fine.

"You are wrong about the variety of Poplar on which my Mistletoe is growing. It is not the Ontario Poplar, but, as I think, though you did not when you saw it, *Populus tremula*, or certainly a variety of it."

PATERSON'S VICTORIA POTATO.

SUCH reports as that in the *Journal* last week cannot fail to be of great service and interest to every one who grows a Potato; and as "D." of Deal's account in one particular differs so much from my trial, I should like to know the circumstances under which the trial was made. Were the sorts grown in a close-walled garden with shading fruit trees? also what is the nature of the soil? I believe both these conditions have much to do with the crop and quality of Potatoes, and to give them a fair trial ought to be considered; and, if we are to gather any good from reports, these circumstances ought to be mentioned.

"D." of Deal, states that Paterson's Victoria "is the best of all Mr. Paterson's much-vaunted seedlings." I agree with him in this (excepting *Economist*, which I have not yet tried); but when he says "it is no great thing," I entirely differ. "D." of Deal, says "it is large"—quite true; "rampant in growth"—also true; and if grown in a close warm garden with shady trees, or on very heavy stiff soils, it is very rampant. "Prolific enough"—also true, every tuber keeping close at home (a considerable advantage), "but not mealy." I could wish "D." of Deal, were nearer the west of England; I would ask his acceptance of a dish, not caring whether they were cooked by a professional or a kitchen maid. I am positive he

would at once confess, that if the Victoria did not possess the good quality of being mealy in his own garden it obtains it somewhere, for a dish of mine is a sight fit for the most fastidious to see, and having seen, makes one long to taste, but having tasted—well, good-bye to the meat.

Now, is "D." of Deal's, opinion of this Potato borne out by others who have tried it in and around the neighbourhood of Deal? for any kind may not do well in one garden, and yet succeed well in the neighbourhood in general. Having a good opportunity to find out, I must say that the Victoria is not only liked, but very highly prized by hundreds who have tried it in Somerset, Dorset, and Wilts. I believe I could in these three counties procure samples from almost every parish, except North Wilts, equal in quality to my own, and from persons who would endorse my high opinion of it. My description of it is, it is large, a strong grower, very free from disease, exceedingly prolific, crops very close at home, keeps well, is very mealy, of finest flavour, and a first-rate sort for the garden or field.

I was going to say something about Prince of Wales Kidney, but enough at present. I took some trouble last season in testing the worth of some fourteen sorts; and if my report would be of any interest to the readers of the Journal I shall be happy to give it.—D., of SOMERSET, DORSET, AND WILTS.

[We shall be glad to receive your report.—EDS.]

PLANTS IN FLOWER DURING JANUARY.

NUNEHAM PARK ONION—VARIETIES OF BEET-ROOT.

THERE has been much said and written with respect to the Nuneham Park Onion, and, as is often the case, some speak well of it, whilst others are of a different opinion. Be this as it may, and whether it is identical with Trebons as some say, or with selected White Spanish as others affirm, or whether it is related to the Giant of Madeira, or whatever else they may assert, it is a fine Onion. The only fault I find with it is having too little seed for my money. I have no objection to sealed packets, but in this case I should like to see a little more in them.

We are having a move among the Beets, too. We have some fine kinds in the market now. So far as I am concerned, Dewar's has the preference; it is a fine-sized compact root. If we had it of a deep crimson instead of a crimson red, I should like it still better. I hope the stock will be selected and improved in colour. There are many more kinds of Beet that are really good, such as Nutting's Dwarf Red, Henderson's Pine Apple, Carter's St. Osyth, Covent Garden Improved, and Whyte's Black, which is the darkest Beet I have seen.

The following are a few plants I have noticed in bloom during January:—

Jan. 4. <i>Arabis albidia</i>	Jan. 20. <i>Cheiranthus</i> , German
<i>Erica ramentacea</i>	" 24. <i>Corylus avellana</i>
<i>Helleborus niger</i>	<i>Jasminum nudiflorum</i>
" 10. <i>Ulex europaeus</i>	<i>Omphalodes verna</i>
Daisy	Double White Primrose
Rose Fabvier	" 28. Rose, Crimson Chiffre
" 17. <i>Alyssum compactum</i>	<i>Viola odorata</i>
<i>Erica medeolifera</i>	<i>Erantthis hyemalis</i>
" 20. Rose Giant des Batailles	<i>Erica carnea</i>
<i>Viola minor</i>	<i>Galanthus nivalis</i>

—M. H., Acklam Hall, Middlebrough-on-Tees.

COVERING FOR ROSES.

PERHAPS I can render some assistance to "Q. Q." (page 109), as to the covering and uncovering Roses and other half-hardy trees and shrubs. Many persons, probably, are familiar with and able to make what is used to ornament stable floors in front of horses' stalls, in the shape of tailed-straw braiding. Well, during a wet day in the autumn, I and my man Friday set to work and made lengths of this, though not caring to throw the very perfection of art into our proceedings, but using, according to the thickness of protection which the trees might require, a layer of from three to twelve straws. For out-door protection wheat straw is preferable to oat or other softer descriptions of straw, as it does not absorb and retain moisture. My man grasps a layer, or weft of, say, a dozen straws, and to them I attach a piece of tarred cord around their centre, loop it on to the key-handle in the lock of the door, or to a hook in the wall, and bend part of the right-hand half of the straws upwards, and part of the left half of the straws to the latter. Now, a fresh feed of straw is brought and laid centrally,

having the ears to the right, and the remainder of the first weft of straw is brought over the second weft, and then the top remainder over it, and another weft immediately banded by my man to continue the woof of braid, thus forming a tail from every weft, remaining out obliquely from the centre of the braiding, and so on. Without assistance the operation can be performed by one person by previously placing the wefts of straw to the right hand of the worker. It is well also in the latter case not to form the braiding much longer than 2 yards for each piece, and to finish off at the ends by tying with about 1½ foot of tarred cord. Thus proceed with both thick and thin braids, and stow them away in a dry place till wanted, which they will be in the beginning of November. Then prepare to put them on by collecting the branches of the trees or shrubs requiring protection into loose cones, to be first secured in this shape by tarred cord, and attach a thin braid at the bottom of—say a Fig tree, and wind it around and obliquely upwards, and tie again at the apex of the tree with the piece of tarred cord which is attached to it. Next, wind a thick braid of straw similarly over the thin one, and then you have a dry, perfectly frost-resisting protection, and a very respectable-looking thatch, placed there without litter and with all the ease imaginable, and if the operator lives in the outside edges of all the cyclones, as we appear to do here, a lashing around of tarred cord will make all quite secure.

When the danger from winter frosts is over, unwind the thick braid from the tree, and there remains the thin one for all the air to circulate through, and yet sufficient to ward off the spring frosts without weakening the young growing shoots. Store the braids away in a dry place, and they will last for years.

As wheat straw is expensive and difficult to procure in this place, I take care to harvest my Pea and Asparagus haulm. The former is stored in large long bundles, which I sever across with a large sharp knife, and then form it into coarse braiding after the manner specified above, and during periods of sharp frosts I place these braids along the tops, on each side of my orchard-house pot trees, and take the tails of the braiding down by their sides: a few pieces of string and a packing needle secure the braids together upon the surface of the soil, and the roots never become frozen. The braids are quickly placed and taken away without litter, and the Asparagus haulm during severe frosts takes its light, dry, and airy position amongst the branches in my orchard house, without injury and with perfect protection to the blossom.—UPWARDS AND ONWARDS.

INJUDICIOUS COMPLICATED COMPOSTS.

IN times long gone by, when the mysteries of our calling were held in high estimation by those who assumed to possess them, an acquaintance with the exact proportions of the ingredients necessary to form a compost favourable to the growth of a particular plant was considered by no means the least important. Receipts for the mixing of the proper soils for the growth of the Carnation, Ranunculus, Tulip, and other plants, were regarded much in the same light as a druggist's knowledge of compounding liquid and solid medicines for the benefit of mankind. Fortunately the day for such secrets is gone by, so far as the gardener is concerned; it is well that it is so, for at the present day we can afford to lose some of the secrets which those of the past age refused to bequeath to us. In this way it is said we have lost a compost for growing Auriculas, which was known to one eminent grower, and of which nothing further is known than that it consisted of nineteen different substances. Perhaps it is as well that the secret did die with him. Other secrets have existed concerning various classes of plants, but occasionally the possessors were much disappointed on finding that greater success was achieved by those not initiated, or who adopted other means. All that is really worth knowing respecting the cultivation of most plants and fruits is made known from time to time, and although now and then mixtures more or less complex may be met with, these and other matters have been very much simplified.

Although the mixing on the day it is to be used of a mass of materials for the growth of a particular plant, is now generally abandoned, the practice still exists in many cases, but its propriety is doubtful. An appeal to Nature would certainly appear to condemn all mixtures but what she had made herself; and although it would not be judicious to entirely abandon the practice of mixing together two substances differing chemically as well as mechanically from each other, in order to form a

useful whole, can we hope to balance the materials so nicely as they are when the mixture is effected by natural agencies? Take, for instance, our best examples of peat or alluvial soils; both are in a condition more favourable to the growth of certain plants than any ordinary mixture artificially prepared. We ought, therefore, to pause before we attempt to blend into one mass substances incompatible with the effect desired to be attained. That great results sometimes are attained by artificial compounds, there can be no question, but are we certain that such results are to be permanent? Most likely not. Nature alone stands pre-eminent for the durability of her works, and be assured the nearer we can approach her in copying her works, the greater the success will be; and in no instance, perhaps, is this more apparent than in the mixing of soils, and their failures after a period of years.

As an exemplification of what is meant by the above, let the reader refer to a paper on Vine borders, by Mr. D. Thomson, which recently appeared in the Journal, and it will be seen that Mr. Thomson formed his borders entirely of the ordinary soil of the garden, and the results are such as any one might be proud of. In like manner other Vine borders have been formed out of unmixed soils, or rather of soils already prepared by Nature for the purpose. Contrast this with such mixtures as are too often formed on the potting bench. A mixture of peat and loam is recommended, but the latter varies more, perhaps, than any soil. Many loams contain a large amount of chalk or lime, and though eminently fertile, and rich in the substances necessary for the growth of a large number of plants, are, nevertheless, unfit to mix with peat with advantage. Perhaps, too, a siliceous sand may be used as a mixture with both, and this is more frequently done than it ought to be. Possibly when our knowledge of chemistry shall be farther advanced, the impropriety of mixing certain substances will be better understood. It is, however, certain, that at the present time composts are too often thoughtlessly made up, and with a total disregard to those natural laws which cannot be violated with impunity. It would be well to bear in mind that when we can use a material already prepared to our hand, it is not advisable to tamper with it by any addition, and when, as for instance, in the case of a Vine border, it is expected to last a good many years, it would be advisable to have it of a porous nature, so as to receive enrichment by liquid or solid substances, without getting into a stiff, sour condition. Some of the very best borders receive very little assistance indeed, and in their formation a material mixed by Nature centuries ago, forms the basis. By-and-by we may get to adopt the same practice on the potting bench.—JOHN ROWSON.

MANY THINGS AND LITTLE ABOUT THEM

Touches of practice make the whole world keen. We have heard something lately about the "perpetuity" and "non-perpetuity" of fibrils; also about cordons, their forms and nomenclature. I am glad of it, because the correspondence must tend towards progress. I have enjoyed the "chaffing," although it was occasionally slightly flavoured with gall. I remember poor Beaton's remark the last time I spoke to him on his way from a Committee Meeting, South Kensington, the last time, I believe, he ever attended there. In the course of our conversation I felt he was sore at heart, and he said, "They say my writings are all chaff." I placed my hand upon his shoulder, and replied, "They say your writings are all chaff, do they? Well, your writings enliven us, and I am very thankful to you for it; but besides all that, you may depend upon it, amongst your chaff there can be found a measureful, and running over, of uncommonly good sound wheat." My answer sent my good old friend on his way rejoicing.

Now, among recent contests was one about root fibrils. I know Hardwicke Hall, near Bury St. Edmunds, and I am known to the writer who so often instructs us from thence. I saw some young cordons in a border at those gardens a few months ago, and the fibrils were then alive, and fulfilling their transitory offices unharmed by delvings, which brings me to a point. Probably you are aware of my success in fruiting orchard-house trees in pots. I have from the beginning adopted Mr. Rivers's advice (plus syringing my trees with heated sewage), as given in the successive editions of his work, "The Orchard House," as well as by going and taking hints with my own eyes at Sawbridgeworth. Now, contrary to his usual practice, some are advocating surface-dressing in the spring, *or* "top-dressing" in the autumn. I have determined to try the

result of surface-dressing, and did not "top-dress" my pot trees last November. The buds are now becoming plump, and are very satisfactory in number, and it is time for me to think about watering the soil in the pots. So after what Mr. Fish and Mr. Rivers have lately written, I thought it might prove interesting if I sent you some examples of what the fibrils and young roots are now in reality, as a touch of practice and as proving the "non-perpetuity" of the fibrils plainly enough. The inference I am at present able to draw is this: the fibrils of my pot plants being as dead as so much cocoa-nut fibre, and the young roots just pushing out fresh tiny spongyoles—fibrils in nonage—would not fresh compost applied in November prove better for them than the soil wherein the dead fibrils have been revelling, exhausting it of its properties, during the last year? We shall see, but you may feel certain that I shall not neglect surface-dressing under these circumstances.

Every tree and bush in this garden is, and has been for years, made to undergo the pinching, or cordon plan in shapes most questionable, and I could refer to many to inform you whether they considered any Frenchman, who cultivates his soil, would be likely to produce more or better flavoured fruit from a given space. If he could, then so much the better for France. Here the females of the household have taken to do all the pinching part of the business within their reach, as a pleasant recreation. It is highly satisfactory besides, for they are so led to take more interest in garden matters, and the trees always look clean and neat. Nothing contends against the aphid tribe more effectually than the constant deprivation of the points of the young succulent laterals.

It was curious to hear the plan so much talked about, as if it were something new, when I was in London. The cordon system and Mr. Standish's new Royal Ascot Grape—and what a capital Grape it is!—were the decided horticultural lions.

I have yet another subject, of which I am fain now to unburthen my mind. At the Royal Horticultural Society's Show, at Bury St. Edmunds, last July, there were three cups not competed for—viz., the Ladies' of Bury first and second-prize silver cups for Orchids, and the Town of Bury silver cup for Ferns. It was at my tongue's end at the time to beg of the subscribers and the authorities to consider whether those cups could not be given to others, worthy exhibitors, in connection with the then Show, and I now ask whether cups or medals not competed for at the great shows of the Royal Horticultural Society in the provinces, could not in good faith be awarded to those who are worthily competing in other classes.—UPWARDS AND ONWARDS

WORK FOR THE WEEK

KITCHEN GARDEN.

Cabbages, where there are not plenty of autumn-sown ones, sow some seed on the warmest border you have, or in a Radish frame. *Celery* and *Cauliflowers*, sow on a slight hotbed, the latter to succeed those sown in the autumn. A pot of Celery may be put into the Cucumber frame, as but a small quantity of seed will be required to be sown thus early, if fine heads are expected in September. *Carrots*, the ground intended for them should be well turned over and pulverised before sowing. *Cucumbers*, sow seeds or procure a few plants from those who force early. The temperature should range from 65° to 75°, allowing 5° more for sun heat. *Potatoes*, plant in a frame, and forward tubers by putting them in any warm place for planting under straw covers and hurdles. *Peas*, a sowing of these and also *Broad Beans* should be made during the present favourable weather. *Radishes* and other salads, with Cauliflower plants, must be looked over occasionally, to see that no failure occur from damp or vermin.

FRUIT GARDEN.

The Apricot and Peach trees have received a most reasonable check without sustaining any injury. No time should be lost in having them pruned and nailed. Look out what netting, canvas, or bunting you have to protect them with by-and-by, and if you are short of these materials, have spruce boughs or fern ready in case they should be wanted. These trees seem in a ripe and healthy state this season, and if wet weather do not occur at the time they are in blossom, a few degrees of frost will do them little injury. Where there are inferior sorts of Apples and Pears, or too many of one sort, procure scions of superior varieties, and keep them in a cool situation till wanted. Strawberries in succession will be brought into frames and houses according to the means at command. The whole stock for forcing this season should be looked over and placed

in some litter at the foot of the houses or south walls, if they have not indeed been there all the winter.

FLOWER GARDEN.

As soon as the ground is a little dried it will be a good plan to fork over all the vacant beds in the flower garden, so as to have the soil properly pulverised prior to planting out the autumn-sown annuals. Preparation must also be made for a general sowing of the more hardy kinds, such as Larkspurs, Godetias, Clarkias, Nemophilas, &c., which should be made on the first day the ground is sufficiently dry to admit of sowing them. Proceed with the pruning of shrubs and common Roses, but leave the more tender kinds until you are sure they will not be injured by frost. Proceed with planting out biennials, and prepare a little ground in a warm corner for sowing Stocks and some of the best of the annuals for transplanting. As a matter of course, all floricultural calendars must, to a certain extent, be acted on only as the weather is favourable for the operations therein detailed as necessary. During spring and summer the experienced florist finds it comparatively easy to point out in the previous week what is requisite to be done the ensuing week; but at this uncertain season we must be guided by circumstances. If the weather continues mild draw the lights completely off the Auricula frames during the day, examine the plants minutely, and see that all is going on well; should any mild rains fall during the week they will be benefited in the middle of the day. When the lights are drawn out, tilt them, so that the grass may become as dry as possible before night. Still cover Tulips with sand as they appear. If the beds for Ranunculuses are sufficiently dry, they should be immediately planted.

GREENHOUSE AND CONSERVATORY.

Orange trees if now removed to an early vinery or stove and kept in-doors all summer, will come into flower next Christmas with very little forcing. Camellias that have not formed flower buds may also be introduced in succession from this time. Some of them may be expected to flower about the end of next September. Plants of *Fuchsia corymbiflora*, if cut back last autumn and preserved through the winter, will flower in May if they are removed to a forcing house. The night temperature of the conservatory should now be lower than through the winter, say about 40°, in order that the plants may be started slowly at first. This should be attended to by all who regard the proper cultivation of their plants. There is nothing more injurious to the blooms in this house than currents of cold damp air. The Camellias are the first to indicate this. When forced hardy bulbs are done flowering, cut off their flower stems, remove the bulbs to the reserve pit, turn them out of their pots, plunge them in a light moist compost, and protect them in cold weather. In the greenhouse, if you guard against frost there is no danger of the temperature of this house falling too low, and air should be admitted on any fine day in order to keep the plants from growing too rapidly at this season. Owing to a drier atmosphere being thus produced, the plants will require constant attention with regard to watering.

STOVE.

Many plants will be soon fit for repotting; and fresh labeling, tying, and training pot plants and climbers will require attention for some time.

FORCING PIT.

That variety of the common Lilac, called Charles X., is the best of them for forcing, as it retains its high colour better than the old purple Lilac. The following plants may be obtained now from this structure:—*Azalea indica* alba and varieties, *Rhodora canadensis*, *Acacia armata*, *Calla aethiopica*; *Pelargonium Album multiflorum*, Admiral Napier, General Washington, Ne Plus Ultra, and some Scarlet varieties; Tulips, several early varieties; Narcissuses, Soliel d'Or and double Roman being the earliest; Hyacinths, Jonquils, Crocuses, Lily of the Valley, Violets; Roses, Fairy, Chinese, Tea-scented, Bourbons, and Hybrid Perpetuals. Fabvier, a Chinese Rose, is one of the best for bouquets at this early period.

PITS AND FRAMES.

Here there will be no want of work for the next three months. Some of the Stocks and other annuals sown some weeks back will require potting-off, putting three or four plants in a pot. Pot-off Verbenas, and put in cuttings of kinds of which you have not enough. Divide and make root-cuttings of *Bouvardia triphylla* and *angustifolia*, and get the plants forward and strong for planting out. Put *Salvia patens* into heat to produce cuttings, and see that everything is in order for the spring,

which will soon arrive. After such a comparatively mild winter, the plants here are not in a condition to be shut up closely during damp or rainy weather. All you can do is to give air at the top and bottom of the sashes. If any amateur wishes to try experiments in inarching Camellias, this is a good time to remove his stocks into gentle heat to set the sap in motion before the operation is begun. It is also now a good time to graft little Orange trees for forcing and blooming in the drawing-room or conservatory. The growth of the young stocks for this purpose ought to be pushed in advance of the seasons by a gentle heat. A few Wallflower seeds might now be sown to raise plants for forcing next winter, for which purpose they are well adapted, as they may be had in flower from Christmas until they bloom in the open ground. Another good forcing plant is the *Philadelphus coronarius*, or Mock Orange, which forces as well as the Deutzias.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Sowed a lot of Peas on banks, covering them with a little fine soil, and then strewing the ground thinly with ashes as a preventive, and covered with a width of wire netting to each row, as without that we should expect few seeds to be left after being sown forty-eight hours. This season in sowing we have resorted to a plan we adopted with advantage many years ago. Instead of one shallow trench for Peas, we drew one on each side of the line, so that these two rows would be about 6 inches apart, and sowed the Peas in both, but more thinly than if one row were used. We thought long ago that with the same quantity of seed the gatherings were thus larger, as the seeds had individually more room, and the staking was the same. Were it not for the enemies that attack Peas at this season before they appear above ground, and afterwards before they can yield their produce, we would sow much thinner than we do, or is generally done. When the seeds and the young plants could be secured, we have gathered heavier crops from a row with the seeds 2 inches apart, than when three or four seeds occupied that space. We use the thicker sowing to meet casualties; not because we consider it to be the best in other respects. When we hear from some gardeners, we cannot help thinking they are so far fortunate whose work chiefly consists in sowing, planting, and gathering. In how many other places have these operations and the due preparation of the soil become of less importance than taking means to protect from many enemies which now find a comfortable home about the garden?

Beans.—Sowed a piece; and we mention this chiefly that those with small gardens may be induced to try the Royal Dwarf Fan or Cluster. A heavy crop of small delicious Beans may be gathered from rows only 14 or 15 inches apart. The Dwarf Green Gem is also a sweet Bean when used young, as it ought to be, and occupies less room than the Mazagan Bean, also valuable for its earliness. We like to see the fine individual seeds of the Windsors, and the noble pods of the Wonderful and the Monarch of the Longpod race, but the produce is not in proportion to the great size of the pods. These huge Longpods when little more than half grown, green, and brittle, and the beans inside not half their full size, make a rich dish when boiled and used in the pods, just as Kidney Beans are treated.

Cauliflowers.—Stirred-up the soil under glasses, and top-dressed a little. Notwithstanding the severe frosts, owing to the dustings of snow, a number of rather large plants have stood on a bank uninjured, and did they go on, would come in before those under hand-lights. We fear, however, that some check will cause them to button prematurely, and then they will be worth little or nothing. We have still a good supply for use from the plants raised in the end of October and protected in an earth pit.

Celery has stood well, but we protected with litter in the coldest weather, and removed it when the weather was fine. When Celery is grown in beds, a little long litter or dry clean straw put on before a heavy snow, is also an advantage, as, if the snow lies long, and there are changes of thaw and frost before the snow disappears, the weight is rather much for the Celery, and the leaves are broken, and the moisture finds its way more readily to the heart of the plant. The slight covering of litter equalises the weight of the snow, and when removed there is little breakage of the leaves. When such leaves are much frozen without any protection, the exposed part de-

cays, and the decay extends downwards until the eatable part is injured or lessened in bulk.

We will not sow much in the open air for several weeks, except Parsnips, which we will sow in a week or so if the ground is in good order. This is much harder than most of the roots we cultivate, and is always the better of being a long time in the soil. We have had fine crops, however, that were sown at the end of March. We will turn over and re-turn our heavy land on all favourable opportunities.

For Sea-kale, Rhubarb, Asparagus, and Cucumbers, see previous notices. Turned over ground intended for Carrots and Potatoes. Prepared for planting the latter under shelter or protection, and sowed Radishes, Horn Carrots, and Lettuces in a bed under glass. Radishes sown late in autumn and protected in winter are becoming rather hard now. Just like late Turnips, their tendency now is to throw up a flower stem, and after that the roots lose their crispness and sweetness. As to hotbeds we would have done more, but a press of other matter, as planting trees and shrubs, has prevented our collecting leaves on which we much depended, and in cold places it is scarcely possible to obtain early crops of some vegetables without a little bottom heat beneath them. In warm places with borders of dark-coloured light soil well exposed to the sun, crops may be had nearly as soon as those helped with a slight heat beneath them in colder places. Potatoes will produce much earlier on warm borders, such as those referred to, if the tubers have been placed in small pots, or thinly in shallow boxes, with rough leaf mould and soil about them, and sprung strong for a couple of inches before planting with all the roots. In doing this place a little warm soil round the roots, and choose a warm sunny day for the operation. In all such planting it is important that neither the roots nor the tops should receive any check, or as little as possible. The plants, therefore, should be well hardened before planting, and a suitable time as respects the weather chosen for the operation.

The principle of avoiding checks is one of those simple matters which are not yet sufficiently considered. With Cucumbers and Melons at this season, it often makes all the difference between success and the want of success, between the pleasure of looking on clean healthy plants, and the pain of seeing them the prey of insects uncountable. Growing such tender subjects in houses heated by hot water, however good in itself, is apt to lessen the care in this matter. When all the operations of shifting, planting, &c., can be done inside, there is less need for extra care, and in process of time less care will be manifested. We have seen Melon plants left for an hour in a cold shed in March, a proceeding which would have horrified one of the particular old gardeners. He would as soon have gone out in a frosty night without clothing. They succeeded with their frames and pits so as to be little behind those with the improved appliances now, but the care they took in shifting and training, so as to give no checks, would be a good lesson to the moderns. We have helped to pot and arrange many Cucumber plants in frames, when it would have been impossible without injury to have carried them even into a close shed, but a man attended, covering us and the open space of glass with double mats, so that no keen draught should reach the plants before it was heated by passing through the moister and warmer air. Air-giving was also a matter of more consideration, than in the slap-dash routine often seen at the present day. Except in the dead of winter, when the hot water heats the dung, unless there is almost an unlimited quantity to fall back upon, we like to see even now the common frame heat the hot water; and where there is enough of material it will often do so with moderately early Cucumbers and Melons.

FRUIT GARDEN.

Pruned in favourable weather, and as, after settling a good many bullfinches which have come in wonderful force this season, the fruit buds of Pears were disappearing, we washed a number of hush pyramids over with lime, clay, and a little soot, not enough to take off the whitish appearance when dry. We like lime very well by itself, as the white appearance is a great annoyance to the birds. A little soot makes the buds more unpalatable. We have seen no tomtits of late, but two months ago they visited us in flocks. We fastened on the trees some parings of meat slit up the middle, had arsenic placed between, sandwich-fashion, and though but little of it was eaten, and we found no dead birds, we have seen none of them since. We never can be sure, however, as the tomtits generally come in flocks. We have often noticed that, though one will not be seen for months, some day we have the pleasure of seeing them on almost every tree. When the bloom is

set we let them do as they like; we would not even begrudge their nibbling a few of the best fruit, if they would only let the buds alone. Last year we put some boughs over an early Pear full of buds, and next day there was nothing but the remains of the buds below the tree.

The Vine border which we covered having yielded a gentle heat which it was a pity to lose, we made a wall from the material, back and front, about 10 inches in height, on that laid a rail flat, and on the rails put some old sashes, and then filled the space beneath with fresh-potted Scarlet Pelargoniums. It was in a similar place the plants did so well last year in pieces of turf reversed, about 3 inches square, with a hole scooped out in the centre, and the roots put in along with some light rich soil. These were planted turf and all. In such a case the plants should be moved, and placed on a hard bottom when the roots have extended an inch beyond the turf.

Cut the Grapes in the late viney as we wanted the room very much, and when thoroughly cleaned, as respects glass, woodwork, Vines, &c., it will be filled with plants, that other places where more heat is now wanted may be freed. Grapes keep longer on the Vines than by any other plan, though they may be kept a considerable time with the wood stuck in beetroot, and suspended in a place neither damp nor too airy; but in most places where every inch of glass has to be made the most of, it will not do to keep a house comparatively empty for a few bunches of Grapes. A week or so ago we cut the last Grapes from the forward orchard house.

Peach house.—We mention here one simple fact for the benefit of beginners, who become nonplussed with the directions about giving plenty of air, &c. The trees being in bloom, of course air was very essential, but during cold frosty days we gave only a little very early, and that kept the temperature from rising much, or suddenly, and we did not give more unless the thermometer rose to about 75° or 80°, but let the heating apparatus become cooler instead. In the late terribly boisterous days we gave no air at all, as plenty would find its way in at the laps, and gave no more heat than was merely sufficient to keep the house at a temperature of 50°, or a little more, when there were a few gleams of sunshine. Obtaining early Peaches economically in a great measure depends on using as little fire heat as possible, and taking advantage of the cheaper and better sun heat. Thus the fire heat at night may average from 45° to a little over 50°, and in dull, sunless days may rise to from 50° to 55°, and even to nearly 60°; but when there is the prospect of a sunny day, it is best to dispense with fire heat, and give a little air early, so that the temperature shall rise gradually, but not greatly to increase the air until the temperature rises above 75°. Provided there is air regularly on, a temperature at midday from sun heat almost alone of from 75° to 80°, will in every way be much better for the plants than a temperature of 60° at night from fire heat. The great point is to give heat in proportion to sun light. Sun heat with air on, however small the quantity, to prevent the accumulation of confined vapour, will never draw or weaken plants if kept at all moderate.

Amateurs tell us that they are puzzled because they see good crops of Peaches obtained by the following plan: The house is shut up late in the afternoon, good fires are put on, and at bedtime the temperature is 60°, and higher before morning. Next day, if dull, fire is kept on to maintain the heat, with air given, and if the day is sunny the house is nearly half open, so great is the quantity of air given. Well, we know such a plan often answers, and amateurs must adopt it if so determined. To our mind the great quantity of air in a sunny day is necessary to counteract the mere extension produced by a high temperature at night, not to speak of the inroads of insects thus encouraged. We merely wish to show that by a more natural system they may save their coal heap, take advantage of sun heat, and secure longer-continued health to their plants with less labour and expense.

We would just advert to two principles in early forcing, where no great heat, as in the case of Peaches, is required, but which have several times been alluded to. First, avoid allowing a strong heat from fuel and a bright sun heat to occur at the same time. Second, be more particular that air shall be always given, however sparingly, early in the morning, than about the mere quantity admitted. These points are chiefly important to amateurs who must leave their pet houses for many hours during the day, as by breakfast time they can calculate with tolerable correctness what the character of the day will be. When we first managed houses on our own account we went regularly out to attend to them every Sunday forenoon, and we

never had a single mischance from overheating, or too little or too much air on these occasions. Just let cultivators watch how gradually the thermometer mounts in a house when air is given early, and how gradually it falls if the sun should be clouded when there are only a few inches of air-opening.

ORNAMENTAL DEPARTMENT.

Besides planting in pleasure grounds, &c., heavy work with planting for cover and timber has been going on. This would have been better done in November, but the time has not come when it is possible to do everything at the right period. A few remarks may be useful for those engaged in or contemplating such work.

1. Unless where very large plantations are to be made, it will always be more economical to purchase trees than to rear them at home, because those whose chief work is to attend to them, will do it better than those who have much and various other work to do.

2. Where much is to be done in succeeding years, and trees are to be brought from a distance, the best plan is to obtain the trees young, plant and grow them in rows for a year or two, and then plant them as wanted, by this means insuring that the trees shall not be long out of the ground; or the latter should be mulched, and the roots properly secured from drying. It is a great drawback when the roots are as much dried in the air as the branches are. Then, of course, every fibre is destroyed.

3. When small young trees are used, and the roots are small, planting by merely making a double slit with the spade, slipping the roots in and treading firmly, will be the most economical method; but when the roots are good and the trees from 3 to 4 or more feet in height, it will be the best plan to make holes from 12 to 15 and 18 inches square, according to the size of the roots.

One great advantage in taking trees up at home, even when obtained young from a nursery, is that the roots can be somewhat cared for. We have seen good-sized holes made for trees 4 or 5 feet or more in height, and for all the roots they had they might have been inserted by slit as well as by holes.

4. Whatever arrangements may be made for preparing the ground and making holes, unless there is a sharp overlooker constantly present, we would not be inclined to make a piece job of the planting, as the object of the hole being made is to give justice to the roots, that these may be spread out, and the best soil placed immediately about them, and, whilst firmly secured, that the stem of the tree should be scarcely lower in the ground than it stood before being raised by transplanting. When the work is paid for by the number of trees put in, there is a temptation to let the roots be buddled together, and to bury the stem considerably above the collar, as thus the tree is more securely and easily fixed in the ground, something in post fashion. If the collar of many plants is much buried—that is, the point whence roots descend and a stem ascends, it often proves a great drawback, if not ruinous.

5. For profitable planting, quick growth, and quick returns, the old rule holds good, "Plant thick and thin quick," but in doing so the permanent trees need not be too close together, nor yet when perching is required, and for that nothing is better than the Spruce for concealment from the sharp eyes of marauders. This, either at first or by suitable thinning, should be so treated as to allow the lower branches healthily to cover the ground; and therefore undergrowth, as Privet, Bramble, Hornbeam, &c., would be of no use near them.

6. Where game, especially rabbits and hares, abounds, it is mere waste of money to plant to any extent, unless the animals are kept out until the plantation is established. It is of little use to talk of keeping them down. The only effectual plan is to keep them out, and the most economical plan we know is to surround the whole with wire netting, and keep it round the plantation for several years. Daubing the trees with nasty washes will be some preventive, but not thoroughly deterrent. Wire netting kept upright by firm sticks, and an inch or two in the ground, as lately recommended, will keep them out, unless when blocked with snow, and then the place must be hunted.

For small plantations and particular trees, we have seen nothing so effectual as a small handful of wheat straw put round the stem close to the ground, brought upwards the length of the straw, and fastened round with two or three small bands of the same. A small ball of cord would do some hundreds of trees in the hands of those not accustomed to binding with straw. The plan is none of ours, but that of a young gentleman greatly interested in planting, and all we can say is, that the Oaks thus treated are growing well, and though the places

are swarming with rabbits and a good many hares, not a tree thus treated has been touched; no attempt has been made to go through the thin layer of straw, and in most cases the straw seems as likely to remain as when it was put on three years ago. What is rather singular, we have not noticed that even mice have touched them, though they have barked Lantanas and other trees near them. In the case of a few hundred Oaks, they may thus be quickly, and so far as we can judge from three years' observation, effectually secured; but in all cases where many acres are to be planted, and four-footed enemies to the young trees abound, we know of nothing alike so economical and efficient for protection as wire netting, about 2 inches to the mesh, and less if small young rabbits abound.—R. F.

COVENT GARDEN MARKET.—FEBRUARY 12.

In consequence of the fine open weather we are well supplied with both home-grown and foreign produce, and there is very little variation in prices. Excellent Broccoli continues to come from Cornwall and the Channel Islands.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples $\frac{1}{2}$ sieve	2	6	to	4	0	Melons..... each	2	0	to 3	0
Apricots doz.	0	0	0	0	0	Nectarines..... doz.	0	0	0	0
Cherries lb.	0	0	0	0	0	Oranges 100	3	0	7	0
Chestnuts..... bush.	8	0	14	0	0	Peaches..... doz.	0	0	0	0
Currents..... $\frac{1}{2}$ sieve	0	0	0	0	0	Pears (dessert) .. doz.	4	0	8	0
Black do.	0	0	0	0	0	Pine Apples lb.	4	0	6	0
Figs doz.	0	0	0	0	0	Plums $\frac{1}{2}$ sieve	0	0	0	0
Filberts.....lb.	1	0	0	0	0	Quinces doz.	0	0	0	0
Cobs lb.	1	0	0	0	0	Raspberries lb.	0	0	0	6
Gooseberries .. quart	0	0	0	0	0	Strawberries lb.	0	0	0	0
Grapes, Hothouse.. lb.	7	0	10	0	0	Walnuts..... bush.	10	0	16	0
Lemons 100	8	0	12	0	0	do. per 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes doz.	3	0	to	4	0	Leeks bunch	0	3	to	0	0
Asparagus 100	7	0	20	0	0	Lettuce per score	1	0	1	6	
Beans, Kidney 100	0	0	3	0	0	Mushrooms pottle	1	0	2	0	
Beet, Red doz.	2	0	3	0	0	Must.& Cress, punnet	0	2	0	0	
Broccoli bundle	0	6	1	6	0	Onions..... per bushel	3	0	5	0	
Bras, Sprouts $\frac{1}{2}$ sieve	2	0	2	6	0	Parsley..... per sieve	4	0	5	6	
Cabbage doz.	1	4	2	0	0	Parsnips doz.	0	9	1	0	
Capiscums..... 100	0	0	0	0	0	Potatoes..... bushel	4	6	5	6	
Carrots bunch	0	6	0	8	0	Kidney do.	4	0	6	6	
Caulliflower doz.	3	0	6	0	0	Radishes doz. bunches	1	0	1	0	
Celery bundle	1	6	2	0	0	Rhubarb bundle	0	9	1	0	
Cucumbers..... each	2	0	3	0	0	Savoy doz.	1	0	2	0	
Endive doz.	1	0	0	0	0	Sea-kale basket	2	0	3	0	
Fenel bunch	0	3	0	0	0	Shallots lb.	0	8	0	0	
Garlic lb.	0	8	0	0	0	Spinach bushel	2	0	4	0	
Herbs bunch	0	3	0	0	0	Tomatoes..... per doz.	0	0	0	0	
Horseradish .. bundle	2	6	4	0	0	Turnips bunch	0	4	0	6	

TRADE CATALOGUES RECEIVED.

E. G. Henderson & Son, Wellington Road, St. John's Wood.—*Catalogue of Flower, Vegetable, and Agricultural Seeds.*

W. Rollisson & Sons, Tooting, London, S.—*Catalogue of Floricultural and Culinary Seeds, Sub-Tropical Plants, &c.—List of New Roses for 1868.*

W. Hooper, New Wandsworth, London, S.W.—*List of Vegetable, Flower, and Agricultural Seeds.*

T. Sampson, Preston Road and Houndstone, Yeovil, Somerset.—*Catalogue of Vegetable, Flower, and Agricultural Seeds.*

W. B. Jeffries, Ipswich.—*The Useful Garden Guide, being a Catalogue of Stove, Greenhouse, and Hardy Plants, Trees, Shrubs, Flower and Vegetable Seeds, &c.*

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix upon the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

Books (*Eucanas Ayres*).—The "Garden Manual." You can have it free by post from our office if you send twenty postage stamps with your address. (R. S. S.).—Kearse's "In-door Gardening" and "Out-door Gardening," post free from our office for 1s. 8d. each.

PRUNING ROSES (J. C. R.).—When roses are worked on a Briar stock the shoots must be cut hard, say, to two, three, or four eyes. This applies to them whether they are for pots, walls, or standards. If they are on the Manetti stock, as a rule not absolute, cut the shoots but little—say, to one-third their height or even less, according to the character of the wood. If the Manetti plants are highly cultivated they will break from the base and all over abundantly without the necessity of cutting them hard at planting time. If they are cut hard at the head, they must be cut very hard at the roots. This observation applies to all trees.—W. F. RADCLIFFE.

PRUNING NEWLY-PLANTED HYBRID PERPETUAL ROSES (J. H.).—“Merely thin out small useless wood, shorten the main stems to the first good eye on firm wood, and cut in the side wood a little to a good eye—in short, when you plant, and ever afterwards, prune them as if they were Hybrid Chinese roses.”—W. F. RADCLIFFE.

MANURE FOR ROSES. PRUNING MARSHAL NIEL (St. Denis).—“Night soil when fresh is a dinner unless the uric acid in it is destroyed. You must mix it with ether 1 oz. if used at once. A small quantity of the mixture would be sufficient. I should mix it with earth, turn it once or twice, and put it on next November. Cut the Marshal Niel Rose slightly. You may leave 12 inches, or all the wood if you like. Tea-scented Noisettes require but little pruning. I am uncovering mine here, and shall prune them at once.”—W. F. RADCLIFFE.

SHREWSBURY'S GAS-BURNING APPARATUS (R. H. F.).—You had better write to Mr. Shrewsbury, stating what you want. You will see his advertisement in the Journal.

WHITE FLY (E. F.).—This is a very active insect, and not easily destroyed by fumigation; but that is the only means we know of keeping it in check. In fumigation with tobacco smoke, the insect, after the first few puffs of smoke, flies to the ground, where it lies comparatively out of harm's way, and after the house is clear of smoke it is not active as ever. Previous to fumigation the floors and other surfaces should be made quite wet, but avoid wetting the foliage of the plants. The house should then be filled with tobacco smoke, which will destroy all it reaches; but as the insect multiplies very fast, the fumigation should be repeated two or three times, and again whenever one is seen. If the insect do not yield to a second fumigation the plants may be dipped in a solution of 4 ozs. of soft soap to two gallons of water, to which has been added one pint of tobacco juice.

POTTING CALADIUMS (D. R.).—In potting, one or more rhizomes may be put in a pot according to the size of the pot and of the rhizomes. One large rhizome is sufficient for a pot of moderate size. Of the smaller sorts three or more rhizomes will be required to make a good potful.

COMPOST FOR ORCHIDS (Idem).—Most Orchids succeed in a compost of equal parts of chopped sphagnum and fibrous brown peat torn in pieces with the hand, but not in the very small, with the addition of about one-fourth part of lumps of charcoal from the size of a hazel nut up to that of a hen's egg, and a little silver sand. The pots should be half filled with coir, and the compost raised high above the rims. The compost for Orchids in baskets should be well rounded, and made rather high, but not so much as for pots.

PROPAGATING LOBELIAS (Idem).—A stove will answer well for propagating Lobelias if they are kept moist and shrouded from bright sun. When pricked-off they should be continued in heat until established, and may then be moved to a greenhouse, and hardened well off in a cold frame before being planted out.

CINERARIA CULTURE (Broughton).—Cinerarias may be had in bloom in January by potting-off the offsets early in summer and growing them for that purpose. Plants from seed grow more freely than those from cuttings or offsets, and are best for early flowering. One offset or plant from seed should be grown in a pot. By stopping, dwarfier and bushier plants are produced. The sorts now grown are superior in every respect to those grown some years ago, being dwarfier and larger in flower, and better-colored. Cinerarias bloom best in March and April.

CAMELLIA CULTURE (Idem).—In a house where no more heat is given than is sufficient to exclude frost Camellias bloom from February to April inclusive. Young plants bloom quite as well as old plants, but being smaller have fewer flowers, but these are equally fine. Plants infested with scale may, with superior cultivation, be expected to recover and bloom well, but we cannot say whether they will do so in a year or not, but it is probable. Camellias, instead of being improved by being placed out of doors in summer, are in most cases thereby injured. To name early and late-blooming sorts would be useless, as they vary so much with the temperature, and as a rule there is but little difference; two plants of one kind do not always bloom at the same time. There are few, if any, basket plants that bloom at the times you name. Some of the Tropaeolums might. Triumphant de Gand is one.

BIRDS EATING FRUIT TREES (Leontus).—You may to some extent render the buds distasteful to the birds by making the trees or bushes thoroughly wet by watering or syringing, and then scattering fresh-shaken lime and dry soot upon them, which will adhere to the trees or bushes. A better plan is to string the bushes or trees with worsted from branch to branch in all directions, forming a network with large meshes, which, though irregular, will scare the birds.

COMPOST FOR HYACINTHS (Carole).—A good compost for Hyacinths is loam from turves six months old, cut 2 inches thick from a pasture, and torn in pieces by the hand, with the addition of one-fourth part of very rotten old cow dung, and plenty of sharp sand. There is no particular culture required for the production of show Hyacinths, and the subject has been frequently treated of fully in our columns. The bulbs that are very firm and heavy are those most likely to produce the best spikes, and, as a rule, the moderate-sized bulbs are best. Large bulbs that are soft and light, with the scales open, are the least desirable, for they invariably have open spikes of bloom.

HISTORY OF PLANTS (A Subscriber).—Stephanotis floribunda is a native of Madagascar, introduced by Mrs. Lawrence, of Ealing Park, in 1842. Streptocarpus ovatus was introduced in 1777 from the Cape of Good Hope; Pergularia odoratissima from the East Indies in 1784. Of Clorodendron fallax we have no notes.

CUCUMBER-GROWING (Pulborough).—Mr. Hamilton died many years since.

EPACRIS MAGNIFICA (R. M.).—The flowers are pink, tipped with white.

VINES IN POTS (A. Z. Y.).—Your Vines in No. 6-pots we would advise you to top-dress and start as soon as you like. Those in 16-sized pots, if you wish fruit from them, we would plunge, or partly plunge, or place the pots, after making holes in them, in others of larger size. If you wished to bring them in late, you might put into 12 or 8-sized pots, making the soil firmly, and then plunge the pots in a bottom heat of from 75 to 84°, whilst you left the tops exposed to the cold for six weeks before you put them into heat.

FLOWER GARDEN PLAN (Jacobs).—You may sow all the seeds you mention, and have flowers in time. Of course you have the Pelargoniums of which you speak. We would make your three little beds more interesting, say the circle 3 filled with Bijou, with a band of purple Verbena; and 2, 2, scarlet Verbenas, with a string of Cerastium, or Blue Lobelia. No. 1 we would plant with Delphinium formosum and Aceratum mixed, then a band of Calceolarias, then Anemones, followed by Bijou and edged with Calendraria uniflora. No. 1, plant as proposed, and if you use Lobelia for 2, 2, use your Pansies instead for edgings.

HOUSE SEWAGE (Idem).—We would not use chamber slops for a lawn. If diluted with five times their bulk of water they will benefit all growing crops if applied to the roots and kept from the foliage. When used at all strong on lawns, these will become brown and patchy. All the Cabbage tribe will be much benefited by the application.

VINEY BORDER (Lore).—A 12-feet border will do for a 12-feet-wide house. Plant inside if you can manage it, and let the roots go out. Every day we find the inconvenience of outside planting. In making an outside border, raise it as much as possible above the general level. However made, have a drain in front; if there is a cold clay bottom, concrete it, and place from 6 to 9 inches of open rubble over it, and on that turf reversed, if not straw, to keep the soil from the rubble. If the natural soil is good add fresh to it. If all is to be new, choose the top spit from a pasture, or such fine loam as may be obtained from the sides of the highway. To every curbed, or cubic yard of this, add a barrow-load of rotten dung, a bushel of fine rubbish, and a peck of broken bones. If too much at once, you may make the border in three pieces instead of all at once. Many garden soils, with the help of a few broken boiled bones and a mulching of dung every year, the old being taken away before the new is applied, will grow Vines as well as the new soil. For such a late house we would recommend white Grapes—Royal Muscadine, White Frontignan, Buckland Sweetwater, and Trebbiano; and three Black Hamburghs, one Black Champaign, one B-perone, and one Trentham Black.

VINE-PRUNING (A Notice).—In your case we would take up your Vines 6 inches from the front glass, rub off all the buds on the stems, and only leave one or two at the top—i.e., at the bottom of the rafter, cutting back to that length when longer. We advise this on the supposition that you do not mean your Vines to fruit in front, but to have a clear stem as far as the lower end of the roof rafter. This is desirable when the front glass is to be used for other purposes, as plants, Strawberries, &c. If you meant to fruit your Vines from the front border up the front glass, as well as under the roof, then, as the Vines have been planted only six weeks, we would cut to within 6 or 8 inches above the border, and take only one stem from each in summer. By this means you will have bearing wood in front next season. The treatment in either case will be good just in proportion as you wish the Vines to bear in front or not. If to be in front, the stems there should be a foot from the glass.

LENGTH OF HOT-WATER PIPES (Squire Ficker).—We have had little experience with 2-inch pipes; we like 3-inch better, and would say that unless made hot your 2-inch pipes will not be sufficient in severe frosts if you cannot cover up part of the house when such severe frosts occur, say from 20 to 30 below freezing point. Instead of your 12 feet we would prefer 60 feet of 2-inch piping, as then the piping would not require to be so hot. Little piping soon becomes waste, as you need more fuel to make limited piping warm. For having a boiler in the house we do not think you can better Kiddell's. We presume you light it outside. For such a small house, merely to keep out frost, a brick stove would be sufficient; but we have no doubt the pipes and boiler would answer. You can easily add another pipe if necessary.

ICE NOT KEEPING (L. McAl.).—We presume that your house, like No. 2, as shown in the number for July 19th, 1874, is all below ground. If so, and your roof is thick enough, and you have double wall, with a space of 12 inches between them, we cannot tell how it is, the ice does not keep if you put plenty in. At the first raining we thought your house was above ground, and in that case the keeping will entirely depend on the walls being airtight, and the roof double, or thick enough to keep heat out. In one such case the outer wall became open, holes made ingress for air, and then the advantage of the double wall was destroyed. Care should be taken to have such an ice well open as short a time as possible in summer. We do not advise you to fill up the 12-inch space between the walls with charcoal, coconut fibre, &c., or even sawdust, which would do as well, because if the house is of any size it would require a large quantity of material to do so. To keep the ice, to prevent the ice being exposed as now to a temperature in summer of from 50 to 55°, and from being enured in such a steaming vapour as comes out of the door every time you open it, we would advise the following: 1. Make sure that all melted ice in the shape of water shall pass off from the bottom without letting air in, by means of a trap always filled with water. 2. Make sure that the walls are sound, especially the outer one, so that in no point, above or below, shall air enter the hollow space. 3. Pack the ice well, but use no straw at the sides. 4. As soon as the ice subsides a little, say by March, cover the surface of the ice with a foot of clean, dry straw, and change when it becomes damp. 5. Have a pipe of 14-inch bore passing through the roof or over the doorway, with a cowl over it to keep moisture out, and fitted with a cork or plug, which you can open in close, warm, moist weather, so that all vapour shall escape freely. Nothing melts the ice quicker than such vapour.

BURNING CLAY (J. N. S., York).—It is easily practised. Farmers call it “parring and burning.” Gardeners call it “charring,” and under this title, at page 310, of the 5th volume of our First Series, you will find full directions.

VINES FOR ORCHARD HOUSE (Orchard House).—There is no better variety for growing in pots in an orchard house than the Black Hamburgh. White Muscadine or Buckland Sweetwater will succeed planted outside and trained up the rafters inside. Lady Downe's would not ripen Grape in such a house.

PEACH TREES IN POTS (*W. S. Chelton*).—We are not much surprised that your Peach trees in pots did not fruit last summer, after being taken up and potted from the open ground in the previous winter. To succeed, you would have required to have assisted the roots out of doors with a little bottom heat before the tops were excited, as lately detailed by Mr. Fish in "Doings of the Last Week." We like at least to half-plunge such pots in a cool house, as it saves watering. It is never a bad plan to set the bloom; but the best security for that is soil, not wet nor dry, but genially moist, plenty of air, and the absence of frost. If these little matters are attended to we have no doubt the trees will be fruitful this season if the wood is matured. We are not sure of the Black Grapes. For Mrs. Pollock Pelargonium, fibrous sandy loam and a little rotten sweet leaf mould and silver sand bring out the colours well.

MUSHROOM BED IN POTTING SHED (*A Very Old Subscriber*).—If the pottling shed is exposed and has no artificial heat, the bed should be at least from 15 to 18 inches in thickness. For this, horse droppings will be best. If these are scarce, dung such as is used for a Cucumber bed will worked up to admirably, and all the better if 2 or 3 inches of droppings can be placed on the surface. Whether the bed be made at once or in several layers, with an interval of some days between putting them on, it is important that the bed should not heat violently, and one of the best means of preventing that is to make it as firm as possible; and the spawn should not be inserted until the heat has declined to 85°, and is likely to remain at that. Then insert pieces of spawn of the size of a walnut, about 7 inches apart, an inch under the surface, and beat firmly down again. Watch that the heat does not rise; if not in a day or two, cover with 1½ to 2 inches of fresh loamy soil, and beat firm, leaving the surface quite smooth. If the trial-stick shows the heat is gently declining, then cover with a little clean litter, or old useless hay, and before the Mushrooms appear regulate the covering so that the bed in the centre shall be about 70°, the surface of the bed from 60 to 65°, and the air around at from 55 to 60°. Many minute directions, and with different materials, have been given, and if you tell us exactly how you are situated we will advise you.

RIDGE CUCUMBERS (*Idem*).—These will in many seasons grow out of doors in the open ground. The dung from a Rhubarb or Sea-kale bed, thrown into a heap and fermented, and then placed in a trench with the soil over it, will generally give heat enough for out-door Cucumbers. Lately the atmosphere has been more in fault than want of heat. If the locality is cold we would keep hand-lights over the centre of the plants all the summer.

TWELVE SELECT VERBENAS (*W. H. M.*).—Mrs. Deans, Foxhunter, Le Grand Boule de Neige, James Walton, Goliath, Inimitable, Reine des Roses, Champion, Rose Rendatler, Monsieur Gourdault, Mrs. Wood, and De Precy.

TWELVE SELECT DAHLIAS (*Idem*).—Imperial, Fanny Purchase, Beauty of Hilberton, Edward Spary, Bob Ridley, Andrew Dodds, Anna Keynes, Criterion, Paradise Williams, Vice-President, Lotty Atkins, and British Triumph.

MARÉCHAL NIEL ROSE (*R. S. S.*).—You should at once shift your small plants into larger pots, using a compost of rich light turfy loam, enriched with one-fourth part of thoroughly rotten manure or leaf mould. Afford them an airy, light situation. It will not be necessary to prune them, but you may, if you wish for a better, stronger growth, cut the shoots back to within two or three eyes of the old wood.

LILY OF THE VALLEY AND VIOLET PLANTING (*C. L. K.*).—You may procure plants of any nurseryman. You may plant them in good, rich, light soil in an open situation, 6 inches from plant to plant, in rows 1 foot apart. The earlier they are planted the better. The Violets you should also procure at once, and plant in rows 15 inches apart, allowing 1 foot from plant to plant in the row. The situation should be partially shaded, and a liberal addition of leaf mould may be made to the soil.

TRANSPLANTING LAURUSTINUS (*Nemo*).—You may remove the *Laurus* at the end of March or early in April, taking care to lift it with a ball, and to water if the weather prove dry afterwards. It may it may be cut-in if at all irregular in growth, and will grow all the better for it.

PORTUGAL LAUREL NAKED AT THE BASE (*Idem*).—You may cut it in as you propose, but not to the extent you name. In cutting it back leave as many of the small shoots as you can, for they will put out fresh shoots more freely than the stronger branches. Early in April would be a good time to move the Myrtle.

VARIOUS (*C. E. S.*).—Your Pelargoniums that have been kept dry through the winter should not be watered until next month, and then you must not supply moisture in excessive quantities, but by degrees, increasing it as the plants grow. It is too soon to bring *Fuchsias* and Pelargoniums from a cellar. Early next month will be a good time. We would mix the horse droppings with the straw from the stable, throwing them into a heap, and turning over once or twice before forming a hotbed, and at each turning sprinkle with water if the materials appear likely to become dry. In this way the heat will be milder and more lasting, and the rank steam will be dissipated. Separately the horse droppings will not do well, nor the straw, but mixed they would answer well. Fowls' dung is an excellent manure, and you may use it in your garden. You cannot sow *Calceolarias* seed now and have the plants in bloom this year for bedding purposes. Cuttings put in now would do well. (*A Young Gardener*).—"Kitchen Gardening" will suit you, and Keane's "Out-door Gardening." You can have them free by post if you enclose five postage stamps for the first, and twenty postage stamps for the second. There is no better chance for a gardener in the island of Jersey than in England. If you need employment there you must advertise in a Jersey paper. If you write to Mr. Richards, Assistant Secretary, Royal Horticultural Society, South Kensington, asking for information, he will send you particulars. Any gardener can go in for examination.

PRUNING ROSES (*Idem and B. Burlington*).—"Cut the Manetti-stocked Roses to the first plump eye in sound wood at the tops of the shoots; cut in the side wood to a sound eye, and thin-out all useless wood. Do not let the centres of the plants be crowded. A free circulation of air promotes health. Cut back at once the Manetti stocks which are budded. Mr. Gill, at Blandford, cuts back his budded Manetti stocks at the fall. My Manetti Roses were thinned-out and shortened after the blooming season. Very little need be done now. I cut back very short this week what few Briar-stocked Roses I have. The sap is very abundant in both Briar and Manetti Roses here. Roses in England generally are not pruned early enough. Much depends on the character of the year.—*W. F. RADCLIFFE*."

NAMES OF FRUITS (*J. S.*).—*Apples*: 1, Scarlet Nonpareil; 4, Embroidered Pippin; 5, Royal Russet; 6, Hanthouse. *Pears*: 1, Geodebien; 2, Benrie Diep.

NAMES OF PLANTS (*T. Bevan*).—The specimens were not numbered, so we cannot refer to them.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending February 11th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 5	30.310	30.140	49	33	44	42	W.	.00	Overcast; cloudy and overcast; cloudy, brisk wind.
Thurs. 6	30.253	30.240	50	26	44	42	N.W.	.00	Cloudy and fine; clear and fine; hazy and frosty.
Fri. . 7	30.018	29.725	48	40	44	42	S.	.01	Overcast and damp; fine, slightly clouded; overcast.
Sat. . 8	30.252	29.657	44	20	45	42	N.W.	.00	Overcast; cloudy and cold; clear and frosty at night.
Sun. . 9	31.495	30.493	45	35	43	42	N.W.	.00	Hazy, fine; clear and fine; overcast, cloudy.
Mon. . 10	30.477	30.429	54	43	43	41	N.W.	.00	Overcast and mild; clear and fine; clear at night.
Tues. . 11	30.483	30.400	52	26	44	41	S.W.	.00	Overcast; very fine; clear and fine, frosty.
Mean	30.228	30.155	48.86	31.86	43.86	41.71	..	0.01	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GAME COCKS' TAILS.

In reply to the remarks of "EXETER," I have to state that I have noticed the "whip," or "switch" tails in three articles at least, and intend to notice them further. I consider, and always shall consider, the hard, stiff, fanned or spread tail, when neat, to be the gamest form of tail, as the very act of carrying the tail up and fanned, or spreading, shows spirit, and contrasts best with the proper, short, close, hard body and hackle feathers; and the drooping or rather drooping-compressed tails approach the Malay type too closely, and show less spirit and pride in my opinion.

As to the drooping tails, I have never seen a good Game cock with a drooping tail. I certainly do condemn black marks in Brown Red cocks' breasts, and hens with black bodies as not pure or as being cross-bred birds, but all Brown Red hens have striped hackles. I condemned only the yellow-hackled Brown Red hens, and advocated the dark copper red hackle in good

Brown Red hens; if pure-bred, both have, of course, striped hackles.

The original colours cannot, in my opinion, be improved by crossing colours, and the proper way to cross is to "breed to match" with different but good blood. Crossing different colours only produces vulgar mixed colours and spangled mongrels, I think; and though I like "crossing to match," I decidedly object to crossing different colours in breeding, and so do most of the best breeders.

I consider that the term "Partridge" is far more correct than "Grouse," for the hens of the Black-breasted Red cocks, and is also far more generally used.

By crossing different colours you will generally obtain far less handsome markings, and less correct markings, than by "crossing and breeding to match." As to which are the true original colours of Game fowls of each variety there are diverse opinions, but all seem to agree that Brown Reds and Black-breasted Reds are original, but differ as to the exact original type of these two old and favourite colours. As to tails there are, of course, various forms, and at exhibitions I believe the whip or switch tails are the better general

favourites at the present time. The close form of tail has nothing to do with hardness or closeness of body and hackle feathers in my opinion. To call the Duckwing hens Partridge-coloured would be, indeed, an absurdity, I think.—NEWMARKET.

P.S.—In my description of the cup and prize Brown Red hen, at page 81, I omitted the colour of tail, which should be of a dark blackish brown colour.

LIGHT AND DARK BRAHMAS.

"THE exception" is said to "prove the rule." The chorus of just dissatisfaction at the treatment of the Light Brahmas is interrupted by a solitary voice, raised by one who has left his old love, the Light variety, for its rival, and who is well contented with the present *régime* under which the cup invariably goes to the Dark Brahmas.

"Y. B. A. Z." is a doughty champion, and one may well admire his pluck as, wearing the honourable scars of so many combats, and dealing, as he has done, with such a variety of subjects, he places lance in rest for a tilt at the Light Brahmas.

Having expressed, through your kindness, my views at some length, and seeing no reason to change them—being, moreover, fully convinced of the justice and ultimate success of the cause of the Light Brahmas, I would not trouble you again were it not that I feel it courteous to "Y. B. A. Z.," as he has appealed to me more than once, to make some reply to his letter, and this I will do as briefly as I can.

I do not take exception to your correspondent speaking of Mr. Worthington and myself as enthusiastic admirers of the Light Brahmas; but I would remind him that Mr. Worthington, as well as Mr. Crook, who wrote so ably in page 83, are breeders of Dark Brahmas as well as of Light, and therefore are not likely to be partial to the one breed over the other, and that both these gentlemen are loud in denouncing the present system as unfair to the Light birds.

"Y. B. A. Z." says, that as shows are sometimes not successful, it is hard upon secretaries to expect them to give cups to both Light and Dark. Mr. Worthington and I both meet this difficulty by suggesting separate prizes, less in amount if need be, for each variety; in other words, the same money given as now, but more fairly divided.

"Y. B. A. Z." asks why, if both varieties of Brahmas have a cup, should not all the breeds of Cochins and Hamburgs have one also? forgetting that these latter have a far more equal chance in competing one variety against another for a cup, than the Light Brahmas have against the Dark.

"Y. B. A. Z." goes on to speak of the improved position of Brahmas in the prize lists, and asks, quaintly enough, whether Dark and Light Brahma exhibitors are to be still dissatisfied? The answer is obvious: the Dark which always take the cup have no cause for dissatisfaction, the Light which never take it have much! He goes on to speak of the "degeneration" of the Light Brahmas. The judges will tell a very different tale. In numbers, in correctness of points, in beauty, they are far ahead of what they once were. I shall not forget Mr. Hewitt's pleased comments on the class (of over twenty pens) at Southampton last autumn, when such was the general excellence that birds which had won many a prize had to be content with commendations!

I am grateful to "Y. B. A. Z." for his allusion to my old cock, which was indeed declared by the judges to be as near perfection as possible, but I am bound to say that the general average of Light Brahmas is much improved; and were he still alive, he would have to compete, though, I doubt not, still successfully, with a larger class of "foemen worthy of his steel."

"Y. B. A. Z." objects in the case of the Brahmas to the judging of two or more classes competing for a cup on the only true and possible principle of equity—namely, the comparison of each specimen with the standard of its own breed. He candidly admits the justice of the principle in the similar case of Geese and Ducks.

Lastly, he imputes inferiority in many respects to the Light Brahmas, and then builds upon this supposed inferiority a theory that the breeding for colour has done all the mischief. He will forgive me, if I say that he does not seem to see that by so doing he puts himself out of court in the question at issue between the two varieties, for how can he be a judge of the comparative merits of Light and Dark Brahmas who substantially denies that there should be any difference of colour between them, or, at all events, makes colour a matter im-

material, and who looks upon them as one and the same breed? Clearly he would not be the best judge of the relative merits of blue and green who deemed blue and green one and the same colour!

Before concluding, let me say how delighted I am to see what sympathy Mr. Worthington's appeal has met with in your columns. From England and Ireland, from London and Southampton, from Alton and Limerick, from breeders, exhibitors, and secretaries of shows alike, comes the same unanimous voice, that Light Brahmas ought to be placed on an equal footing with the Dark.—JOHN PARES, *Postford*.

P.S.—Since writing the above, I have read the letters of "NEMO," and "BENGAL," in the last Journal. The remarks of "BENGAL" are most just and forcible. Secretaries will be wise if they adopt his advice, and that of Mr. Warren, the able Secretary of the Southampton Show, and establish equality between Light and Dark, giving, if possible, cups to both varieties, and, in any case, separate prizes.

"NEMO" is, I think, right in maintaining that the under fluff of Light Brahmas should be, not white, but of a bluish grey. My old cock, Sampson, so often mentioned, and whose merits all your correspondents seem to have recognised, possessed this characteristic. Plenty of good birds at the present time possess it also.

"NEMO" is also right in saying that the theory of the Light Brahma being a "cross" originally, is utterly untenable. The original imported birds depicted in Miss Watts's book, were Light Brahmas, not Dark, and may connect the latter variety with the Coloured Dorking in origin; the similarity has frequently been pointed out to me by careful observers at shows. Be this as it may, I should be very sorry to introduce White Cochins into my yard, with a view of "improving" what "NEMO" most justly calls such "exquisite beauties" as pure Light Brahmas. "NEMO" concludes with a most valuable remark—he most wisely calls the attention of judges to the fact that Light birds look smaller than Dark ones, when they really are not so.

Though a breeder of neither the Dark nor Light birds, and therefore writing without favour or affection, may I be allowed a few words on the question now agitated in your columns? When Mr. Pares speaks of "the best relatively of its own variety," I imagine he means the same things as "Y. B. A. Z." does by the "comparative merits;" for if a cup be given to two varieties, we may fairly assume that there is one ideal standard of excellence for both—that is, if a represents such standard for Dark, it does also for Light; for if we say the standard for Light is A—B, then an inferiority on their part is assumed, and it is a farce to offer a prize to the two varieties when one is assumed to be necessarily superior to the other. It is as though a competitive examination were open to black and white boys, and a certain number of marks allowed to the black; or as if a cup were offered to black and grey horses, with an understanding that the grey must be the worse; in this case the dark horse would be sure to win, and no one would "bet on the grey," no one would even enter a grey. But in point of fact it appears that judges will assume this superiority on the part of the Dark birds. The fairest thing would therefore be, instead of giving a cup, to divide the money between the varieties, or what would, perhaps, be better, to give the cup in alternate years to Dark and Light, and then we may say to the breeders of both—WHY BE AFRAID?

HAMBURGHS *versus* BRAHMAS.

It requires some audacity in the face of the prevailing worship of the feathered Brahma to come forward and proclaim him as great an impostor as his Hindoo namesake, but if you care to have the experience of a convert you may insert this communication.

At the commencement of last year I was red hot for Brahmas. I spent a fair amount of money in purchasing a cock and ten hens and pullets of various strains. Of the hens six were allowed to run with the Brahma cock. The remaining four, with three half-bred Cochin hens, were put in a separate run with a Dorking cock. I also had a third run, in which I had a Golden-pencilled Hamburgh cock, two hens, and a pullet. The runs were side by side, and the fowls all had exactly the same treatment, each lot being let out alternately for a run in a large field, generally for half the day. As I could not always distinguish the eggs of the Brahmas from those of the half-bred

Cochins I must class them together, but as far as I could judge the latter were the better layers. By the end of the year the three Hamburgs had laid 476 eggs, and the thirteen Brahma and half-bred hens 734 eggs—i.e., the Hamburgs averaged 158.66 eggs per hen, and the Brahmas, &c., only 56.46 eggs per hen. Of course, some of the latter were occasionally occupied with sitting and rearing chickens; but allowing for the time it would have required to break them off from sitting if they had been wanted for laying only, this would not have made very much difference in the result.

I may add, that I reared a good many chickens of both breeds, and could not discover the slightest difference in the matter of hardiness. I do not think I lost a chicken of either breed from disease.

As for the superiority of Brahmas for winter laying, the simple fact that for some time the only eggs I have had are from my Hamburgs, while the Brahmas content themselves with consuming vast quantities of barley and afford no return, is the best answer I can give.

Undoubtedly Brahmas are larger fowls for the table than Hamburgs, but as they eat at least in proportion to their greater bulk, there is not much economy in that. They are also decidedly superior in every respect to Cochins, which I have also kept, and where the poultry-keeper is compelled to keep his unhappy fowls in a small back yard, he cannot do better than keep Brahmas, especially as they resemble nothing so closely as a small heap of cinders on two legs, and can, consequently, be warranted not to show dirt.

If, therefore, the amateur who keeps fowls principally for their eggs has sufficient space, I should strongly advise him to keep Hamburgs; if he has room to keep two kinds separate, or prefers pure breeds, then Brahmas also, as they will do the hatching and rearing part of the business as well as any fowls. If he wants a good and handsome table fowl, he will find a cross between a Brahma cock and a Silver-Grey Dorking hen first-class. The hens from this cross are almost exactly like the parent hen, except in the shape of the comb and in having a few feathers on the legs. I have seen an old hand deceived by them, thinking them to be pure Silver-Greys. Of course, they are vastly more hardy than pure Dorkings. The opposite cross of a Dorking cock with Brahma hens is not so good, as the chickens are more leggy.—OORNILUS.

P.S.—Not the least objection to Brahmas is the appalling ugliness of the chickens, contrasting strongly in this respect with Hamburgs.

FOUR-TOED HOUDANS.

MR. SCHRÖDER has suggested what I have no doubt will appear to many, including myself, a step "forward," by breeding out the "backward" toe of the Houdan. Is it not, however, written in chronicles immemorial that the Dorking must have the useless monstrosity too, and how can his Houdan offshoot want the same? Did the supernumerary create speed, like the "seven-leagued boots," or strength as in the six-digitated giant of Gath, or delicacy of taste, or beauty of form, then indeed the excrescence would be tolerable; but failing all these, is this wonderful member to be venerated and conserved as a relic of the primeval and barbaric age of poultry?—JAMES C. COOPER.

MERITS OF BRAHMA POOTRAS.

IN this, my first epistle to the Journal, I will just jot down the doings of a few of my strain of Dark Brahmas; it may, perhaps, interest some of your thousands of readers.

I coincide with your remark, that a fowl cannot lay eggs and make feathers at the same time. I have one that has laid ever since the 30th of October, 1866, only excepting the time she hatched and reared nine chicks, which process occupied just seven weeks and two days. Now, up to to-day she has laid 279 eggs, all good, but she has been in moult for the last five months, and at the present time she is without feathers under the wings and breast; notwithstanding, she looks hearty and well, and to all appearance is likely to go on laying for some time yet. Our clergyman thought, although she was so good a layer, it did not follow that her produce would be as good. Now, to show that she has been beaten in her first fifty, we possess one of her pullets which has laid fifty-five eggs in the same number of days—that was from the 1st day of September up to the 1st of November, just two months. She then took to clucking, and sat for a few days, and stragge, as it seems to me, took to

moulting when only about eight months old. She has had a thorough shift, has recovered from it, and has laid ten eggs since. I also possess a pullet which laid ever since the 10th of November, with the exception of missing four days in the time. One more is worthy of mention—the smallest hen we have laid forty-one eggs in forty-one consecutive days!

Time will not allow me to further transgress, only I would like to remark that we never see an advertisement for the sale of Brahma eggs, except of those of some strain that has taken a prize. Now, if such a thing as a competition were to take place for the best Dark Brahmas for egg-producing, I should, perhaps, stand a chance, although, probably, it might be a small one. However, all who see my fowls declare them very good; whether they are judges or no I will not say.—J. P.

A NATIONAL ORNITHOLOGICAL ASSOCIATION.

I HAVE read with much interest the article emanating from Polefield Hall, which appeared in your issue of January 16th, as well as that by my coadjutor in the south. The idea of forming a—what shall I call it?—perhaps, an All England Ornithological Association—has long forced itself upon my mind as being an object to accomplish which no effort should be spared, and I hail with great satisfaction the munificent offer which accompanied Mr. Bedwell's pithy but most expressive suggestions.

I am not writing officially, but I think I can safely say that the Committee of the Association I have the honour to represent will supplement Mr. Bedwell's offer with another £20, and I am open for any amount of work to assist in giving this project some tangible form. With this view I shall be glad to hear from Mr. Bedwell his idea of the framework of such an Association, with some details of its objects, and the best methods of giving effect to them. Till then I feel as though it were, perhaps, rather premature to offer any suggestions; I will, however, follow up Mr. Warren's remarks if you can spare me a little more space.

I regard the formation of an All England Association as a great means of doing what very few, if any, isolated societies in England can do unassisted—that is, offer year after year to the United Kingdom a complete schedule, and a liberal scale of prizes. I do not think it fair that any one society should be called upon to do so from its own immediate resources, should find the sinews of war, and throw the doors of its exhibition open to all the breeders in the kingdom; but a combination of societies can do this, and do it on a very grand scale too; they would be in a position to issue a schedule embracing all varieties of birds: they would not be hampered by considerations as to whether such and such a class would pay, but rather by supplying such a prize induce exhibitors to compete for it. This would of necessity give an impetus to breeding, and it would soon be patent to those concerned that commercially it would pay as well as "breeding Pelargoniums or bees." I need adduce no plainer proof of this than the fact, that the introduction of certain classes into the schedule of the North of England Ornithological Association at the last Sunderland Show created a position for birds hitherto comparatively worthless, and that many were claimed at prices from 25s. downwards. The idea of being able to do collectively what cannot be done individually is to me the most prominent one. The mode of organisation, method of government, &c., will soon suggest itself if gentlemen who take an interest in our feathered favourites will assist in ventilating the subject in these columns.

A "Standard of Excellence" and a method of judging by it will each be a *sine quâ non*, nor do I see any difficulty in arriving at such. If the most celebrated breeders of any given class of birds had each of them a certain number of points to divide among the different properties of such birds, the mean result of the aggregate would give a standard at once. That there are men fully competent to judge upon sound principles I am confident, and an extension of the basis of operation would as a natural consequence develop their talents. I am not acquainted with many public judges, but those I have come in contact with appear to be men quite up to the day, and thoroughly able to perform their duties—to mention names would be invidious.

I should like to call the attention of all likely to take a part in furthering this most interesting scheme to one very important matter, and that is to the imperative duty of enacting the most stringent laws to insure common honesty in showing birds. Perhaps that is rather too strong, and a libel on the

many sterling exhibitors who would scorn to tamper with a bird. Well, I apologise, as a friend of mine always says after uttering a disagreeable truth. "But until managing committees and hon. secretaries act resolutely," writes a gentleman to me who was victimised at the Crystal Palace last February, "do not look for support from those who would esteem it a privilege to help you."—WILLIAM ANTHONY BLAKSTON, *Secretary, North of England Ornithological Association.*

CLASSES FOR DUCKS—RETURN CHARGES.

Is it right that Mandarins, Carolinas, Shell Ducks, Wild Ducks, &c., should be exhibited at shows which are only for domestic poultry, and are in most schedules so entitled?

We find that the prizes are mostly given to these varieties, and that tame domestic varieties, such as Black East Indians, which breed well, and are such splendid birds not only on the pond but on the table, where it is said nothing can equal them, are now never looked at. I think it is time some attention should be devoted to this matter.

Again, is it right that in the Any other variety class judges should give the prizes all to one variety, ignoring the presence of first-class specimens of another variety? I find much written now in "our Journal" with respect to separate classes for Brahmas, but in my opinion the time has now come when a separate class should be given to the Black East Indian Ducks. At only two of our best Shows is this done—Birmingham and Manchester. At the former I have noticed that the amount of the entry fees exceeds the prizes offered by pounds, thus proving that a separate class would pay committees of shows; and such is, I think, the due of the large numbers who now keep this variety. Much more to the purpose it must be to give more varieties in a schedule than to subdivide the varieties already named in schedules.

I quite agree with the letter signed "PARTRIDGE COCHIN." I sent two pens to Oldham Show; they cost going, 1s. and 1s. 6d.; coming back, 1s. 6d. and 2s. 6d., and in every instance of late have found the same thing. Surely something ought to be done to remedy it.—S. B.

CANKER AND ROUP IN PIGEONS

HAVING read the inquiries made whether the diseases of Pigeons are infectious, I may mention that I have been a Pigeon-fancier for the last thirty years, although I think that this will be the first time my attention has been so attracted as to cause my name to figure in print, and I do so now merely to state my experience.

Some time ago I purchased a lot of twenty birds from a gentleman who advertised in your Journal. I had ten the first time all right. I afterwards sent for five other pairs, which were duly delivered in three days, they having to travel 150 miles. When I received the last lot they were, as you may imagine, more dead than alive. I had them all cleaned, and put them by themselves until they recovered from their late travelling. After they had been some time mixed with my stock, which consists of high-flying Tumblers, several pairs of Carriers, and Antwerps, I found one or two moping about. I immediately examined them, when I found to my sorrow that they had the canker. I took them away from the stock, and endeavoured to cure them, which I did by using the only way that I think they are to be cured. I had a stick furred out at the end, and I removed all the yellow matter which collects where canker is, and which would, if not stopped, spread, and in a very short time suffocate the bird, such being the termination of the disease. I then procured Johnson & Son's improved mounted caustic No. 8, in wood; with plug or screw tops, they are to be obtained at any chemist's, and excellent they are; no fancier should be without one, which he can carry in his waistcoat pocket without annoyance. With the caustic I touched the parts affected, taking care to cleanse the mouth with a soft cloth.

I was very unfortunate, for out of the ten birds I destroyed six, the others I made a cure of; but, worst of all, many others of my stock caught the canker, which I attribute to their drinking out of the same fountain, and they were all very healthy birds and in fine feather, and that denotes a Pigeon's being in good health. I have lost ten or twelve birds since, and I have taken every care of them, but the canker has spread among them; therefore I firmly believe that it is infectious. If time would permit I could relate many such cases.

As regards the cause of the disease, I think the birds being penned up so closely, and being short of food, they naturally eat their own droppings; and probably there may have been food put in the hamper in the first place, which had become mixed with the droppings.

Of roup I have not the same dread as I have of canker, for I believe it is not infectious. I have seen dozens of cases similar to that which Mr. Huie has pointed out, in which one bird has had it, the other not, and all the billing they did, did not affect the healthy bird. I am trying the recipe Mr. Heath recommended for it, hoping it may be the means of curing many of my birds at present suffering from it—a circumstance I attribute to the very damp season and to my Pigeon house having a stone floor, instead of a boarded one, which is very much better.

I think there is another cause of birds having the canker, and that is drinking from out of leaden spouts on the roofs, where the water lodges.

About five years ago I had a stock of 120 birds, consisting of Tumblers, Carriers, and several pairs of first-rate Antwerps, which were imported to me direct from Antwerp. My fountain is a self-feeding one, holding about three gallons of water. I took upon myself to clean it one day. My shot-pouch being at hand, and thinking that would just do, I emptied it into the fountain, and after giving it a good shaking, took out all the shot, as I then imagined. After some time my birds began to show signs of sickness—no apparent disease, but a gradual falling away, and many of them fell dead when in the act of flying. I am sorry to say I lost upwards of thirty birds before I found the secret out, which was I had left some of the shot in the fountain, and if I had not found it out in time I believe that I should not have had one bird left.

I have always through the moulting season, and, in fact, all through the winter, used the herb rue; taking a handful, and letting it remain covered with water in an earthen vessel by the fire, afterwards pouring it into the fountain, and it assists the birds to moult freely, and keeps them warm in winter.

Weak birds when moulting I always assist by pulling feathers from both their wings and tails, and always with success. I feed my birds on broken Indian corn mixed with barley, and I have them always in good feather.—R. PRITCHARD, *Ludlow, Salop.*

AN AMERICAN APIARY.

I HEREBY make a statement of the proceeds of an apiary owned by myself and son. We had at the time the honey harvest began about 115 swarms, very lightly stored with honey; in fact, three-quarters of them had none, for we fed them daily on cheap sugar to keep them from starving through the spring. They began swarming June 14th, and ended August 11th, the Italians taking the lead by at least two weeks, and swarmed later by three weeks: the last one that came out was from a young Italian swarm, and gathered honey enough to winter. We now have 201 swarms, and sold one, making ninety young stocks, worth 10 dols. each, and 7225 lbs. of surplus honey.

The account stands thus:—

Honey sold in glass caps, to date	6155 lbs.
Honey strained and sold, to date	350 "
Honey strained, and on hand, to date	240 "
Honey in boxes and on hand, to date	380 "
Honey used in the family, and given away	100 "

Making in all

I think the above statement is not far from correct, as we kept the account. Our bees are mostly Italian, and I believe are as pure as can be found anywhere, bred by Wm. W. Carey, of Coleraine, Massachusetts who possesses superior advantages for keeping the Italian bees pure, and is a man perfectly trustworthy in all respects.

I think we have greatly increased the value of our bees by the introduction of the Italians; it seems to give new life and energy to all their movements, however slight the mixture. I have given the amount of honey our bees have collected; and now I will give the product of a single swarm of hybrids I have in a large box hive, which cast a swarm June 20th, that I put in a hive in which I use four glass boxes, and from which we took fourteen full boxes, of 7 lbs. each. The mother stock cast a second swarm, from which we took four boxes, making eighteen boxes, or 126 lbs. from the two. I then transferred the old stock, and should think it would weigh 100 lbs., there being no young to hatch. I think the contents separate from

the hive would weigh 75 lbs., which, added to the surplus above, made 201 lbs., and three good swarms for wintering. We had other Italian swarms that did equally well; one cast a swarm and made fourteen boxes, and the new swarm made five boxes, besides some parts of boxes, and cast a swarm; another came off July 2nd, and filled twelve boxes. Our honey was mostly from white clover, and sold for 30 cents a-pound.—DORR BRIMMER, Hoosick, N. Y., December, 13th, 1867 (*Boston Cultivator*).

A BEE FLOWER.

AN excellent bee plant is the *Phacelia tanacetifolia*, or Tansy-leaved *Phacelia*. It is a tolerably hardy annual, some seeds of which were brought into this country from California in the year 1832. Although but little cultivated, it is remarkable for its elegant foliage and fasciated spikes of violet flowers, which continue to blow during the greater part of the summer and autumn months, but chiefly in June, July, and August.

This plant is easily raised from seed, which should be sown in the spring in ordinary garden ground, and it requires no protection after the severe frosts are over. Besides being a great acquisition to apiarians and to amateur bee-keepers on account of the special attraction of its numerous flowers for bees, it is highly ornamental, and deserves to be generally grown in flower gardens, and in the neighbourhood of apiaries.—W. T. C.

ECONOMY IN COAL.

LAST spring (*ride No.* 318, vol. xii.) I brought before the readers of "our Journal," the plan of flooring grates with sheet iron, which I had then, on good authority, recently adopted. My notice was supplemented by a few approving words from the Editors, and some lines which conveyed in rhyme a speech of Serjeant Warren, who was the originator of this plan for economising coal. I am now, having practised the plan one full year, able to speak of results.

In the years 1866 and 1867, I have had the same number in family, and the same fires in the house, and when examining the two coal bills, I find that for 1867 just one-quarter less than that for the former year, and the coals have been the same price per ton each year. Thus a decided advantage is gained, the expense of fuel being reduced one-fourth, consequently a coal bill of £12 would be reduced to £9; one of £8 to £6; one of £4 to £3. I have been particularly careful in my calculation, in order that there should be no possible exaggeration. Newspapers and common report stated that the cost of coal would be reduced one half; but this is not the case, but a reduction of one-fourth is certainly worth obtaining by so small an outlay as 2s. for a piece of iron wherewith to floor each grate. I press this plan, therefore, upon our readers, whether wealthy or poor; the former to adopt it in order to increase their charity purses, the latter for the sake of economy. I have found during the last year that we have had as much or even more warmth, and that the fires do not go out for hours. Even occasionally a fire lighted at noon one day, has without any intention been found still burning the next morning. In this case, most probably, it was packed together, and added to late in the evening.

Now I am speaking of economy, let me add, as an old house-keeper, I have found that the pig tub and the cinder pit are the two receptacles for the extravagances of the cook and the housemaid. If the master is known to have an eye over both these (the pig tub and cinder pit), he will prevent a great many things being made away with, which ought to be eaten or used in the kitchen, which said things too often are put in a pig tub. And, oh! the large cinders that are thrown into the cinder pit. In this new plan of flooring grates with sheet iron, not a single cinder ought to remain, except these taken off before going to bed, and which serve to make a fire with in the morning, and light more readily than coals. Except these lumps there ought to be only ashes.—WILTSHIRE RECTOR.

OUR LETTER BOX.

PREVENTING HAMBURGS FLYING (*T. H. N.*).—It is one of the amusements of Hamburgs to fly over any wall. Anything is preferable to cutting their wings, as that not only disqualifies, but it spoils their appearance. You must either put an upright netting on the top of your 8-feet wall after the manner of a tennis ground, or you may, and we think it a more effectual remedy, put up the netting leaning over towards the inside. We have known birds confined by this that would have flown over any upright fence.

FOWLS DYING OF INFLAMMATION (*Sarbiton*).—We think boiled liver chopped-up with pepper is enough to account for any inflammation. We can give no better advice to any poultry-keeper than to follow nature. Where would a fowl find boiled liver dressed with pepper? and what state of body would require it? All such feeding is bad, and will cause only sickness and disappointment in your yard. Feed on meal, alaked with milk or water; vary it with barley, Indian meal (rarely), kitchen scraps, table sweepings of crumbs. Supply garden refuse, especially lettuces, freely; if the fowls' run does not afford it, let them have some heavy seeds of growing grass, cut with plenty of fresh earth hanging to them. Eschew stimulating and unnatural food.

POINTS OF HONDANS (*Leicester*).—We give you the points of Hondans taken from the best French authorities and endorsed by our best judges. We will answer your questions as they occur. They must have five toes, and beards, and small top-knot or lark crest. Yellow feathers are a disadvantage, but red ones are a disqualification. Amateurs should insist on all these points. To ignore or overlook the lack of them, is to open the door for the introduction of crosses and mouscadescripts, the drafts and refuse of yards, that cause disappointment to amateurs, and bring an otherwise good breed into disrepute.

PRIZE POULTRY (*K. Hall*).—It is quite possible to rear prize-taking Brahmas or Cochins-Chinas in a space 36 feet by 40 feet, with the run of a quarter of an acre for six months annually. The earlier they are hatched the better.

TEMPERATURE OF INCUBATOR (*R. B.*).—The temperature needful for hatching eggs is 105.

POULTRY FARM COMPANY (*J. Wright*).—If such a company exists it is a simple contract debt, and you must sue them in the County Court. If the company does not exist, then goods have been obtained under false pretences, and you ought to employ the police.

SELLING EGGS (*Hemcliffe*).—The price you speak of is a retail famine price. Few can afford 3d. for an egg, and there is only sale for a limited number at such a sum. In addition to this, the scarcest time is past. You could have sold for a fortnight before Christmas, and for a fortnight after, at high prices, but the supply now increases daily. If none of your friends can buy a fresh egg for less than 3d., it will pay for three or four to club together and have them from you. A basket of eggs will come from a long distance for less than a shilling.

SENDING BUTTER AND EGGS BY RAIL (*R. B.*).—Put the butter in an earthenware jar, and the eggs in bran.

FAILEN COMES (*A Northampton Bee keeper*).—Slightly raise one side of the crown board and blow under it a few whiffs of smoke from a cigar-charred fumigating tube, or a smouldering roll of linen rags. Then in about a minute boldly lift off the crown board and take out all but one or two of the frames and detached combs, brushing the bees off them and back into the hive with a stout feather. Having replaced the crown board the abstracted combs should be conveyed in-doors, and there secured in their frames in the manner described in page 84 of the "Gardener's Almanack." When all are fixed they may be replaced in the hive, and the operation repeated on a smaller scale with the one or two remaining combs. Keep a sharp look-out for the queen, and carefully protect her from injury during your manipulations. Select a fine mild day for the operation, and do not on any account resort to fumigation.

SAVING AND UTILISING CONDEMNED BEES (*E. H.*).—No honey runs out of the cells, and, consequently, none is lost by inverting a hive for the purpose of driving.

FEEDING BEES (*Querist*).—There was an error in the reply to "G. J." in our last number. The latter end of this month (February), should have been the time named for the commencement of spring feeding, instead of "next month," as therein stated.

LONG-FARED RABBITTS (*T. W.*).—If you refer to our No. 537, published on the 12th of last September, you will find stated the essentials for breeding them. You know that warmth is essential, yet you "expose them to all kinds of weather!" Their hutchies should be kept in a warm outhouse; and if it be kept artificially warm—about 60°, all the better.

ASTHMATIC AND BALD CANARY (*M. C. Dixon*).—The asthma and baldness from which the Canary is suffering is the cause of cold, or most likely it has been kept in too warm a place, and not had sufficient water. If it has been hanging too near the ceiling, and gas or coke has been burned in the room, the same effect would be produced. Change its situation, and give some egg boiled hard, chopped fine, and mixed with a little mawseed; also give a little green food, such as water cress, and plenty of fresh water, in which put a little saffron, and the feathers will most probably appear when the moulting season comes round. The finest singing birds for the cage are the German, but they generally do not continue in song so long as a good Norwich bird. If you refer to other cage birds it remains entirely a matter of fancy, they are so numerous.

LOVE BIRDS (*A Constant Subscriber*).—Love birds are to be purchased at Mr. Hawkins's, Bear Street, Leicester Square, or of Mr. Judd, Newington Butts, and most of the respectable bird dealers in London. The price is from 25s. to 30s. a-pair.

SQUIRRELS.—"L. R." wishes to know if Squirrels eat the grub contained in the oak-gall. His gardener assures him he often sees them doing so, and the ground under the oak trees is covered with the remains of the oak-galls.

POULTRY MARKET.—FEBRUARY 12.

We have still a very short supply. The conclusion of the Game season and the near approach of the Parliamentary season, make us hopeful that our long period of depression will lighten, if it do not disappear.

	s	d.		s	d.		s	d.		s	d.
Large Fowls.....	3	0 to	3	6		Pheasants	3	0 to	3	6	
Smaller do.	2	6	3	0		Partridges	1	6	1	9	
Chickens	2	0	2	6		Guinea Fowls	2	6	3	0	
Goslings	6	0	6	6		Hares	2	0	2	2	
Ducklings	3	6	4	0		Rabbits	1	4	1	5	
Pigeons	1	0	1	3		Wild do.....	0	3	0	10	

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 20—26, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
20	Th	Meet. of Linnean and Chemical Societies.	45.1	30.2	37.6	20	7	af 7	22	af 5	22	af 5	25	af 2	27	14	1
21	F	Anniversary Meet. of Geological Society.	46.2	31.9	39.1	19	5	7	24	5	59	5	23	3	28	13	54
22	S	Royal Horticultural Society, Promenade.	46.5	31.7	39.1	19	5	7	25	5	31	6	21	4	29	13	47
23	Su	QUINGUAGESIMA SUNDAY.	47.1	31.5	39.3	14	1	7	27	5	59	6	20	5	30	13	39
24	M	Meeting of Royal Geographical Society.	46.7	33.5	39.6	20	59	6	29	5	21	7	51	6	1	13	50
25	Tu	Meeting of Institute of Civil Engineers.	47.3	32.4	39.8	21	57	6	31	5	47	7	40	7	2	13	51
26	W	Meeting of Royal Agricultural and Geological Societies, and Society of Arts.	47.0	33.2	40.1	22	55	6	33	5	12	8	47	8	3	13	52

From observations taken near London during the last forty-one years, the average day temperature of the week is 46.6; and its night temperature 31.9. The greatest heat was 67°, on the 26th, 1846; and the lowest cold 8°, on the 20th, 1855. The greatest fall of rain was 0.92 inch.

GLADIOLUS CULTURE, AND FOR ROOM DECORATION.



DESERVEDLY the Gladiolus has become a favourite flower, and many of its varieties are so reduced in price that it is now almost within the reach of the cottager.

This flower has many good properties. Perhaps one of its greatest is its suitability for decorative purposes. When cut and intermixed with other flowers for the drawing-room it will not wither in two or three days as an ordinary flower does, but, with care

and attention in taking off a little of the lower part of the stem, supplying fresh water, and removing the decaying blooms, a succession of expanding buds enables it to retain its place for a fortnight at least.

It can be advantageously appropriated to window decoration, interspersed with other plants to form a contrast. Take a bottle, of which the neck must be sufficiently wide to admit the stem of a Gladiolus, and plunge it into soil in a flower pot—a deep, narrow pot is the most suitable for this purpose—fill the bottle nearly full of water, and cut a spike the height that may be required, introducing a few blades of its foliage to give it the appearance of a growing plant. By attention as above, by keeping up a supply of fresh water, and, of course, preventing the rays of the hot sun from falling directly upon the spike, I think that all who try this method will feel themselves compensated for the slight trouble they have taken. Those who grow the bulbs in beds or groups can always take a few spikes for this purpose without materially injuring the appearance of the garden: hence one of the advantages of grouping.

A succession of bloom may be kept up by amateurs or gentlemen's gardeners for from four to five months. There are two ways of accomplishing this:—1st, by planting at different times; 2ndly, by a careful selection of large and small bulbs.

Perhaps I may here be permitted to say that I have been an ardent florist for more than forty years, and have cultivated bulbous-rooted plants to a considerable extent. I commenced the culture of Gladioli as soon as they came into repute, and have paid special attention to them. They are more hardy than the generality of people are disposed to think; however, I paid a penalty in testing their hardness by losing upwards of two hundred bulbs; but, under ordinary circumstances and in a favourable situation, they may with safety be planted, weather permitting, in the latter part of February or the early part of March. When they are about to break through the surface, a little protection is necessary, such as straw, dry litter, or cocoanut fibre; but for those who can afford it, thick Nottingham lace hooped over about a foot high is less unsightly, and can easily be removed every favourable day.

Some persons recommend artificial heat, this I strongly object to for bulbs that are intended for the open ground; but if early blooming is required, I rather prefer to plant in pots, and plunge in a cold frame, choosing my largest bulbs and the early varieties for this purpose; in fact, I

consider it a good plan to plunge in this way, at different periods, to obtain a succession of bloom when there is convenience at hand to do so.

In potting for the cold frame, first insert crocks, then a little sound turf mixed with sand and leaf mould; next put in the bulb, and cover it with sand and crushed charcoal, filling up with the previous compost. Be cautious not to give too much water. When planting out, remove the top soil, or rather turn it back, and add a little more sand and charcoal.

I would impress upon all cultivators of the Gladiolus the absolute necessity of a dry bottom or good drainage. I have been rather amused at the detailed account given by "B., *Darlington*" (see page 4), of his friend's mode of growing. He digs out his bed to a depth of 3 feet. (It being strong soil, I hope there is a drain from the bottom.) The first layer consists of 4 inches of turf; then I calculate that there will be 9 or 10 inches of rotten cow dung (it is a pity to waste such good stuff; it often cannot be obtained), and 18 inches of turf and loam; then come the bulbs in cocoanut fibre, and 4 or 5 inches of turf and loam upon this, making the 36 inches. Had I to make up his bed, and 3 feet deep, my experience would lead me to proceed as follows: 6 inches of brick rubbish, then turn back upon this 8 inches of the top soil taken out, with a little sand added, as it is strong; upon this 5 inches of the rotten cow dung, and 13 inches of the turf and sandy loam; then my bulbs smothered in a little clean river sand, mixed with bruised charcoal, completing with 4 inches more of the turf and sandy loam, of course thoroughly incorporated.

The following, which is my own mode of culture, I have invariably found successful:—Bed 30 inches in depth; bottom dry, of course. Turn back 10 inches of the top soil taken out, put in 4 inches of old cow dung; then well-mixed turf, sand, and loam, with the addition of a little old leaf mould, if certain of its containing neither fungus nor anything to create it, to the depth of 12 inches. I then plant my bulbs smothered in a little clean river sand, or the drifted sand from the coast, which I prefer, mixed with crushed charcoal, and a covering of 4 inches of turf and loam. Protect as above. I do not object to silver sand, but it is in some cases more expensive, and I consider the other quite as advantageous.

I am not an advocate for growing Gladioli in beds unless the blooms are required for exhibition; when this is the case, the bulbs should be planted 8 or 9 inches apart each way, leaving a groove between the rows for the purpose of applying liquid manure, if necessary, as I strongly object to any kind of manure coming in close contact with the bulbs. It is better, as a safeguard, to water the bed slightly before applying the liquid manure, and also again after doing so.

If not wanted for exhibition, I prefer grouping five or six bulbs together, or as number and convenience suggest, the soil being prepared in the same manner. In the autumn, when I take up my bulbs, I treat them in the same way as I have done Tulips—simply dry them, and protect them from frost during their time of rest. I throw out the soil upon a space prepared for it to the depth of the

cow dung. I then have the cow dung forked up with a portion of the soil below it, turning this over frequently to temper it thoroughly, at the same time turning over what had been previously laid out. When planting time draws near I add a little more rotten cow dung, and then fill in the soil that has been thrown out. This I have done for three years in succession, and have never been disappointed with the result.

When leaf mould is introduced, let it be leaf mould, not rotting leaves. Nothing to my mind is more injurious than decaying sticks or timber. Pieces of rotten sticks are invariably mingled with decaying leaves, and as invariably fungus is produced. Of all edgings for beds, avoid wooden ones; the boards and stays employed are almost certain, sooner or later, to produce fungus, a consequence of all others to be feared. I do not know of anything else which has such an injurious effect upon bulbs.

The disease of the *Gladiolus* is a perplexity to all cultivators who have suffered by it. From close observation, however, I attribute it mainly to the following causes:—1st, Too tender nursing; 2nd, Atmospheric influence; 3rd, By manure being brought into close contact with the bulbs; 4th, To a fungus, which may be introduced by manure, rotting leaves, decaying timber, &c. Of these the first two are, in my opinion, the principal. Bulbs started in bottom heat are more subject to become diseased than those planted in the open ground, especially if not properly hardened in a cold frame previous to planting out; when so stimulated, they are incapable of sustaining the severity of the shock to which they are subjected on being planted out. As soon as the growth of a plant is from any cause checked, it at once becomes the prey to atmospheric influences. If your readers will take the trouble, when they observe a plant becoming unhealthy, to examine its foliage with a microscope, they will find it minutely specked or blotched. On continuing their observations daily, they will find this appearance extend gradually, till ultimately the plant sickens, the disease having then penetrated the bulb. I have sometimes tried sulphur dusted through a fine muslin bag, and have thought with success, but have not sufficiently tested this to recommend it as a remedy.

There appears to be some doubt as to how far the roots of the *Gladiolus* penetrate into the earth. I should recommend those who are desirous of proving this to introduce, when planting, a piece of thin, common window glass, about 18 inches long by 10 wide, perpendicularly into the soil, close to a medium-sized bulb, and when the plant is in full bloom, to take away 4 inches of the soil from the centre of the outer side of the glass, taking care not to disturb it; they will then have an opportunity of deciding how deep the roots really penetrate. Any of your readers who think proper to try this experiment will be somewhat surprised at the result. This will also afford proof as to whether the disease commences at the root or above ground. I have been in the habit of employing this interesting method upon various plants for years.

Since writing the above, I have read with much interest the article by Mr. Tillery, for which I beg personally to thank him. I fully coincide in many of his views, but the means at his command are evidently so extensive that few can act upon some of his suggestions. I therefore still offer my more humble experience for the benefit of amateurs and others who, like myself, are in a less favoured position.—*M., Durham.*

THE ROYAL ASCOT GRAPE.

I HAVE had frequent opportunities of seeing the Vines and fruit of this variety at the Royal Nursery, Ascot, from the time the Vines were started in December, 1866, until now, and have been much pleased with it. I am glad it has gained the appreciation of the Editors of *THE JOURNAL OF HORTICULTURE*. I am not quite certain, however, that it ought to be classed amongst our earliest Grapes. It is perfectly true that it colours earlier than any other Black Grape; and being the blackest of all Black Grapes, and having fine large berries, it was acceptable in market before the Black Hamburgh, and brought 2s. per pound more than the latter. I did not, however, think it quite ripe; and it possesses so many extraordinarily good qualities that I should much regret to see it recommended for what I am not certain that it is. Having thus expressed a doubt whether it ought to be classed amongst our earliest Grapes, I must state that the plants of it which Mr. Standish has grafted on the Chasselas Musqué, and which produced the fruit to which you refer at page 94, seem to have done their work in maturing and

ripening the bunches in so short a time that I am quite prepared to believe that, grafted upon the Chasselas Musqué, the Royal Ascot will prove the earliest Black Grape we have seen. I must also state that I have noticed the temperature the fruit was produced in has been low. From what I have seen and the inquiries I have made, I believe the average temperature in which the Grapes shown at the last meeting of the Fruit Committee were grown did not exceed 55°, when the temperature had to be kept up by means of fire heat, and this has of course been the case for months. This is an exceedingly low temperature for a first-class Grape to attain the state of perfection in which the Royal Ascot was when shown before the Fruit Committee. I think I can safely say that the bunches did not make their appearance until towards the middle or end of August.

You say it possesses "a richness of flavour which is not found in any early variety except itself." I would add to this that it is in all respects, when fully ripe, the finest Black Grape I have ever tasted. It possesses the firmness of flesh of the finest ripened Muscat, more briskness and piquancy of flavour, without the luscious richness of properly ripened Muscats. I decidedly prefer this Grape when fairly ripe to the most perfectly ripened Muscat I ever tasted.

To what you say about the prolificacy and pertinacity of this variety in yielding a succession of fruit without going to rest, or showing any disposition to do so, I can honestly add that the Vines seem as if they could be kept growing and showing fruit continually; and I have no doubt that this variety can, with proper management, be easily and cheaply ripened, and had in a fresh state any month in the year. I do not think that the ripe fruit now is quite equal to what this Grape was in June last, but in its present state I do not know where to find its equal at this season. It is fresh, crisp, and perfectly delicious.

I have no right to expose Mr. Standish's treatment of this Vine, but a few words as to how the plants which produced the fruit shown before the Fruit Committee were treated may account for the berries not being of the size they ought to have been. The Vines which produced the fruit shown were planted last May in a border of soil not more than 18 inches wide, and on the surface of this were four 4-inch hot-water pipes in two sets of two. The poor little Vines—for they were very small when planted out—seemed to me in great danger of having the little life they had in them roasted out of them. Then they were smothered up with pine plants; and the house was, for the sake of the Pines, kept much too hot for the Vines to have any chance to make a strong growth. After the fruit shown before the Fruit Committee made its appearance, Mr. Standish determined to give the Vines more soil for their roots to work in; but in doing this he found that the roots of the Vines had made their way amongst the materials in which the Pines were plunged, and to accomplish his object he had to all but transplant the Vines, and this after they had shown their fruit. The Vines flagged, dropped some leaves, and showed clearly that they did not like the treatment; but next time I saw them the fruit had made wonderful progress, and the Vines seemed to have quite recovered from the check they had sustained through the transplanting. If the Vines had been planted in anything like a fair border, and left to help themselves without being transplanted, I have no doubt that the berries would have been much larger than they are. I think they are something wonderful, considering the treatment the Vines have received.

I beg to thank you for the information that there is in Italy a variety of Grape which possesses the perpetual-bearing character which the Royal Ascot has shown. This character was to me so extraordinary that I was inclined to fear it might not be lasting, or rather that it might be less strongly exhibited in the course of a few years; but now I know that there has long been a variety with this perpetual-bearing character in cultivation, there can be no fear that the Royal Ascot will not retain this most valuable characteristic. The Royal Ascot requires no such attention as you say is bestowed upon the *Uva di tri volte*, for it never produces a lateral that does not show one, two, or three bunches according to the strength of the Vine.

The constitution and vigour of the Royal Ascot Vine are very remarkable. Mr. Standish allowed the Vines which were planted in the autumn of 1865, in his house of this variety, to carry a heavy crop, which they perfectly matured in May and June, 1866. Then the perpetual-bearing tendency forced itself into notice, and a goodly number of bunches which showed after the first crop was cut were thinned and left to take their chance, the house being kept open and cool. These coloured

and were exceedingly handsome fruit, but they did not ripen nor nearly attain perfection. Later in the season the Vines pushed a fresh set of laterals, and the show of fruit on these was wonderful—two and three bunches on many of the laterals; and this swarm of bunches, or a great part of them, was left until the Vines were pruned in November, and then these seemed as if they would have ripened a fair third crop if they had been fairly treated for this purpose. If I am not greatly mistaken the Royal Ascut will prove to be the best quality of Black Grape we have seen, and its perpetual-bearing character will render it the most accommodating and valuable of all Grapes.—WILLIAM OGSTON, *Gardener to Lord Anwyde, Titnes Park.*

MILKY WHITE AND PATERSON'S VICTORIA POTATOES—THE DISEASE.

I SEE you recommend (see page 63), four kinds of Potatoes. I have grown all the same varieties, also about twenty kinds in all, but I find none so good for general use as the Milky White for early and Paterson's Victoria for late use. I can highly recommend these two kinds as the very best for good croppers, and not so liable to the disease as most other sorts. Last season almost all my Potatoes were diseased, but Milky White and Paterson's Victoria were very little diseased.

One fact is worthy of note—namely, that on a plot of ground near where these kinds were grown was a crop of Onions. These Onions were sown on ground that Potatoes occupied in the previous season, and many of the tubers were left in the ground; consequently they became troublesome, and the tops were kept constantly cut off until about the middle of June, and after this date they were allowed to grow. In the autumn, during digging the ground, we found very good sound Potatoes, although the same varieties that we planted were almost rotten. This seems to indicate that the disease will not attack Potatoes after the middle of June.

I remember some years ago planting Potatoes in July, and had a fair crop, and no disease, but those planted early were much affected. Has any correspondent found late planting good? or do you suppose that the Onions would have any effect in preventing the disease?—HAWKINS.

FRUIT-GROWING IN THE NORTH.

ALLOW me to correct a small mistake in my letter published in your number of January 16th.

After enumerating the first-rate standard Pears the following sentence occurs, "These have not yet borne abundantly." It ought to have been, "The last two have not yet borne abundantly"—namely, *Beurré de Rance* and *Knight's Monarch*. The others bear freely. *Althorp Grasse*, a Pear commended in one of your late numbers, although ripening freely on the wall, is quite second-rate here.—JOHN McCulloch, *Duffus.*

CATERPILLARS ON PELARGONIUMS.

THE large green caterpillar which your correspondent "R. E." finds so destructive to his young stock of Pelargoniums, *Verbenas*, and *Calecolarias* is the larva of the Angle Shades Moth, *Phlogophora meticalosa*.

The moth appears in September and October, and lays a vast number of eggs on almost any garden flower that comes to hand. It is very fond of finding its way into the greenhouse, where, in the warm atmosphere, the eggs soon hatch, and the young larvae keep feeding on the florists' treasures all the winter.

The best plan to destroy the larvae is to go round the house with a lantern at night, when they will be found feeding on the topmost shoots. They generally conceal themselves during the day.

The Brimstone Butterfly (*Gonepteryx Rhamni*), always deposits its eggs in the spring, and upon the buds of the Buckthorn, *Rhamnus catharticus*.—H. HARPER CREWE, *The Rectory, Drayton-Beachamp.*

CUPRESSUS MACROCARPA.—Mr. Robson may be glad to hear that trees of *Cupressus macrocarpa*, both large and small (one 24 feet high), do remarkably well in this situation, which is 800 feet above the level of the sea, much exposed to wind. The soil

is light, consisting of decomposed granite. It succeeds far better than the *Wellingtonia*, which, unless well sheltered, does not thrive here. This is the experience of—AN IRISH GARDENER, *County Wicklow.*

RAMBLINGS—GESNERA CINNABARINA.

OF the innumerable subjects which owe allegiance to Flora, which are ever laying their beauties at her feet, and seeking for the occupation of a niche of honour in her temple, some base their claims on the brilliancy of their flowers, others on the beauty of their foliage, and a third group on symmetrical form and proportions. Some of these subjects, though heralded by a flourish of trumpets, stand but for a moment before the practical gaze of the world, and in obedience to the fiat of public opinion fall into the rear and there remain. On the other hand a few, by a combination of good qualities, hold their own in the front ranks, seeming proof against the ordeal of criticism, and only step back as if in courtesy to their younger followers, being confident that their intrinsic merits will not suffer them to remain in obscurity.

But few subjects possess in combination these elements—viz., brilliancy of colour, beauty of foliage, and symmetry, and still fewer which unfold them in the floral night of winter. There are, however, some. I take for the moment the *Gesnera cinnabarina* as a representative, and will pay a passing tribute of admiration to its qualities in the columns of the Journal, where neither old nor new are refused admittance so long as their merits entitle them to rank as subjects of general usefulness. It is not that I have selected this especial branch of the extensive family of Gesnerads that I wish it to be held in higher estimation than others of its fraternity, there are many kinds which I have never seen, and which, for aught I know to the contrary, may possess equal or greater distinctive features of merit. I am not instituting comparisons, but simply testify to that which I see, and from which I derive pleasure—a pleasure which I am desirous should be participated by all who have it within their reach.

Gesnera cinnabarina is not only a plant of great beauty, but of easy culture and great tractability. It may be had in succession for many months of the year if required; but it is in the dull months of winter when it seems to shine the brightest and last the longest. It is here regarded as a staple plant for stove decoration at this season of the year, and is grown in quantity proportionate to the size of the house. In order that my small resources may contribute to a lengthened display of brilliant colour, I make it a point to have the Gesneras coming in when the Poinsettias are going out. Being more dependant on the weather than those who are provided with properly constructed houses for preparing this and kindred subjects, I cannot always hit a given time with exactness; but I am happy in having an employer whose practical mind can comprehend the entire routine of supply, and who exercises a just discrimination in these circumstances. I am led into this ramble from the fact that other employers more inexperienced may be at times a trifle too exacting, drawing comparisons and arriving at conclusions without giving full regard to conveniences or altered circumstances.

To resume. In the culture of the *Gesnera*, as in the case of other subjects, I have recourse to improved expedients determined by requirements. The tubers of the plants now in bloom were potted in July, a little bottom heat being provided for them by digging the soil out of a frame, which had been put up for seeds and cuttings, and in which had subsequently been grown a crop of early Cucumbers, putting in place of the soil mowings from the lawn mixed with a few leaves, the whole being covered by 2 or 3 inches of sawdust to absorb the gases evolved by the decomposition of the grass and leaves, and to plunge the pots in. The pots used are the same as those in which the plants are now blooming; one tuber being placed in the centre of a 5 or 6 inch pot, three or more tubers being put in pots proportionally larger. The pots were about two thirds filled with soil, and top-dressing added as the plants progressed. A few tubers were put in small pots for shifting on, but these have not done so well as those which have not had their roots disturbed by repotting. The soil used is one-half good turfy loam, the remaining half peat, leaf mould, and thoroughly decayed cow dung, in equal proportions, liberally mixed with sand, plenty of broken charcoal being added to keep the mass open.

The plants remained in the frame until September, the sun supplying the sole atmospheric heat, which was economised by

carefully giving air and early closing, and in nights when the sky was clear, and radiation consequently rapid, a mat was thrown over the glass. At this time, the bottom heat being all gone, and the plants starting, evidently requiring warmer quarters, they were transferred to a shelf near the glass in the plant stove. But why not have brought them in here sooner? Simply because the shelf was occupied by a few late Gloxinias and other plants of a like nature, which I could not dispense with; and herein is the necessity that gardeners should and must at all times exercise their mental faculties in looking ahead—it may be for months, in providing for, to the casual observer, unseen wants, and in avoiding contingencies unknown except to the initiated.

But I am rambling again, and hasten back to say that with the treatment here described the plants flourished, and are now in fine bloom, conspicuous in their scarlet costume amongst their more sober friends the Ferns, and giving an ample return for the trouble bestowed on them in their somewhat chequered career. I doubt not there are hundreds of people throughout the country who have the beauties of this fine old plant brought before them; on the other hand there are many plant stoves into which it does not enter. To the owners of these I say, Get it, and grow it by the dozen, or hundred if you like; grow it well, and then if you are not satisfied with it blame—J. W.

EFFECTS OF LAYERING A VINE.

SOME time back I observed a remark in the Journal by a writer, to the effect that he would never allow a branch of a Vine to be bent down so as to root itself into the border at a distance from the main root. What harm can this do? I should have supposed that so long as the branch was not severed from the parent, it could not be injured by the additional new roots, and that the parent could be as little injured by the extra roots to feed the branch.—F.

[This is a disputed point. We have seen Vines layered in all directions, until it was impossible to know which was the original root or stem; but as a general rule, the result of experience and observation, we have found that Vines do best when all the roots proceed from one part. It is easy to obtain roots from any part of a Vine stem, but in general they are long, and not well furnished with fibres. Even Vines raised from layers on this account are not so much liked as those raised from a single bud, where stem and roots proceed from the same small space. In particular cases the plan you allude to may be adopted, when it is desired to keep on old Vines a little longer without a fresh border and fresh planting.]

THE ROYAL HORTICULTURAL SOCIETY AND ITS GARDENS.

I AM a horticulturist in the sense of being always pleased with pretty flowers. I watch with interest the little groups brought up week after week from Chiswick to Kensington for the decoration of the conservatory or by way of a show. I appreciate the good work which is done at Chiswick in the elimination of many supposed varieties of Peas and Beans with high-sounding names; I even read with interest striking phenomena of vegetable physiology; and yet I am heretic enough to protest against Chiswick being kept up as a neat and trim show garden, and to this end, as it appears to me, your remarks of Thursday last on the Society's operations are directed.

I think it would be a great mistake to "keep up" Chiswick in any other sense than as an experimental garden, and as a nursery for the decoration of Kensington, her "aristocratic sister," as you are pleased to call it. South Kensington and not Chiswick, as you state, is in fact the place where, as far as possible, the results of the Society's agency are to be chiefly exhibited; and unless what you term the Society's "legitimate work" is made to conduce to the amusement of the "miscellaneous multitude" you hold so lightly, the diminished amount which will be forthcoming for horticultural pursuits will soon make itself felt.

People of Kensington and its neighbourhood find a large proportion of the funds of the Society; but whilst they praise and neglect the scientific meetings, as we complacently term our horticultural *réunions*, and talk of, but never visit, our horticultural treasures at Chiswick, they think with me, that all the jewels which will bear the translation should be brought

up for the decoration of the aristocratic sister, especially when she holds her Saturday "at home."

Might it not serve the purpose of some mere of our flower-growers to show us their specialities occasionally, as Mr. W. Paul does? Could not the Council make it worth their while to do so in some way? I see that one of your contemporaries thinks that the band is a sufficient attraction to bring visitors; but this is a mistake. People get tired of a band, and want the eye gratified as well as the ear.—H.

[Our correspondent has mistaken the object of our remarks, which were intended to show that through the present excellent management of the Society, horticulture, and especially the horticultural garden at Chiswick, has received much more aid and attention than formerly, and yet the garden at Kensington looks none the worse, and the finances are very much the better. We are far from depreciating the importance of the garden at Kensington, which, doubtless, now forms an important part of the constitution of the Society; and while we rejoice to see Chiswick maintained as the experimental garden, we would deprecate the neglect of Kensington, which must always be regarded as the show or promenade garden, and which contributes so many enjoyments to a large body of the Fellows.]

EMIGRATION OF GARDENERS TO AMERICA.

I HAVE been a subscriber to your Journal for some time past, and hope to be so for a long time to come. It would be strange indeed, if, in your many pages, I did not now and then find something quite at variance with my ideas regarding various matters, and about which I should like to say a word or two. This desire is especially strong with me just now, since reading "A Few Words Suitable for this Christmas," by "WILTSHIRE RECTOR," in which, after speaking of the manifold struggles of some "gardeners by profession," to make both ends meet, he says, "Ner is it a time for encouraging emigration. . . . Many have recently gone abroad with a little capital, and that being soon spent, have become labourers in a land where a labourer has fewer comforts and more hardships than he has in England."

I have lived where I now am for eleven years, and having had during that time never less than twenty, and often more than forty labouring men in my employ, I am competent to speak of what comforts and what hardships a labouring man usually finds in this country.

This winter the times are especially hard, and so an account of the workman's present condition cannot certainly be considered as putting it in a too favourable light. I have now twenty-nine men employed, each of whom receives for his day's work 1 dol. 60c. in our currency, or about 5s. sterling. This makes the week's wages 30s. If a man has a family he takes this money home and uses it as he may think best; but if he is a single man, he obtains good board and lodging for 5 dols. a-week, or a trifle more than 15s. sterling, thus having half his wages left as clear profit, except such part as he may need for clothing.

Some people are in the habit of saying, that although the wages are so much more in the United States than in Great Britain, still the difference in the price of provisions more than makes amends; but this is entirely untrue. The chief articles of food, although dear, are cheaper here at this very time than they are in England. American flour, and American Wheat, and Indian Corn, are being continually shipped to England, and so are American butter and cheese, and hogs of other American provisions. If, after paying freight and all other expenses, these shipments did not generally prove profitable, this exporting would soon come to an end. In addition to these articles of food that are among our exports, beef, mutton, and most other meats, are cheaper here; indeed, so is almost everything else that we use to maintain life.

The enclosed slip of paper is cut from the New York *Daily Times* of yesterday (January 27th). The freight engagements to Liverpool for the previous day were, as this will shew, 7,500 bushels of Wheat and Indian Corn, 22,500 bushels of corn, 50 tons of provisions, 300 boxes of bacon, 2,500 boxes of cheese, &c.

"FREIGHTS.—For Liverpool there were taken 2,150 bales of cotton at 7-16d. to 3d. by sail, and 3d. to 3d. by steamer, per lb.; 7,500 bushels grain, by sail, at 9d. for corn, or 9d. for wheat; 22,500 bushels corn, by steamer, at 12d. per bushel; 50 tons provisions, by sail, at 30s. to 35s.; 300 boxes bacon,

by steamer, at 50s.; 2,500 boxes cheese, by steamer, at 60s. per ton. Per Glasgow, 100 tes. lard, by steamer. For a port in the United Kingdom, a brig, with 21,000 bushels corn, at 7s. per quarter. For Havre, 65 hhds. tallow, at 1½d. per lb."

Doubtless, those whom the "WILTSHIRE RECTOR" mentions as having gone abroad with a little capital, and having spent it, were prodigal sons, who wasted their money in riotous living, and were ashamed to confess it, turning their faces homeward without ever looking for a day's work. Or else, perhaps, some of them were "gardeners by profession," who without any experience whatever as to difference of climate, put all their small capital into a piece of land bought at a dear rate, and went to work to make a living out of it, but before the experience was gained, the money was all gone. I must confess, though, that generally they manage to make somebody else pay for their experience. For instance, I myself helped to pay for one fellow's instruction last summer. He came early in the spring, and wanted me to give him a job. He said he had worked fourteen years for a Mr. Edmonds, near London, and told me he understood all about the business; that he had been here some time, and knew all about the climate. He talked so well about what he could do, and was so desirous of a trial, that I agreed to give him wages amounting to 6s. 6d. a-day in English money, a man to help him, and the control of the chief part of the garden. He procured what seeds he wanted, and was all ready to begin operations, but he did not quite like the shape of the spade, and some of the other tools. I got other spades and tools until he was pretty well satisfied. "Now, John," said I, "have you all you need?" Only one thing more was wanted, he was to have all his own way, as the splendid results he promised could only be obtained by his being perfectly at liberty to do what he chose. This privilege I conceded, not with great readiness, however, but still willing to make the necessary sacrifice in view of the benefits to be obtained. Once or twice only I was about to make a suggestion or two, but recollecting the promise of non-intervention, I kept silence, and allowed the "fair trial" to go on.

A pretty business John made of it. The mind of man can hardly imagine a more dismal failure. With the exception of the Radishes and the Peas, none of the vegetables we had proved worth the price of the seed that was sown, and the time required to sow it. The early Cabbages have not headed yet, and as this was expected to happen last June, and it is now midwinter, it may be fairly said that they never will.

One day John came to me and said he thought he ought to have some "flowers."

"Why!" said I, "John, I never knew you cared anything for flowers. I never see you looking about the greenhouses."

"Oh, not those flowers," replied John, laughingly, "Cauli-flowers I mean. We gardeners call 'em flowers in the old country for short."

So he set out several hundred plants, "to be sure of having enough." "Well," thought I, "what in the world shall I do with such a lot, unless I sell them? At any rate I'll send some regularly, as long as they last, to the rector of the parish, to Captain Jim, and all my other friends." To my sorrow I record that all this forethought was wasted, for not a single Cauli-flower came to anything but leaves.

At last, one fine afternoon, John came to me and wanted to know if I would pay him what he had coming to him, as he wanted to go to New York, about thirty miles distant, and put his money into the savings bank. He would be back on the following day, he thought.

"John," said I, as I handed him his money, "it is lucky for you that you are not obliged to take your pay in vegetables. Is it not?"

John gave a feeble smile, but made no reply. He never came back. About a week after he left, I said to one of our men that I thought it rather strange John had not returned yet. The man laughed and told me he "guessed" John was "kind o' discouraged, and not coming back no more." It was even so. Several months have gone by; but I still think of him at times, and mentally give a quiet blessing, remembering that we are told to bless and curse not.

So this is the way of it. If John had come from England with some money to spare, he would, no doubt, have gone to work on a piece of ground of his own, and have wasted his money for himself, just as he wasted mine for me.

In this country any industrious labouring man is sure not only of a good living, but of something more; and, with us, the

idea of a man studying economy to the extent of depriving himself of the comfort of a pipe of tobacco, is simply ridiculous. If any man can do more than an ordinary labourer, he can also obtain additional payment for this knowledge. Many a young fellow who has in England only swept out the greenhouses, and carried soil and pots, comes here as a "professed gardener," undertaking the care of Orchids, stove plants, or anything else that may come in his way. How many notable examples of this could I give, were not my letter already too long. But let any gardener who really understands the care of a good collection of plants come to the United States, and he may be sure of a good place and rapid advancement. Very many, if not most of the best florists in this country, men who are living not only in plenty, but in affluence now, are English, Scotch, or Irish, and little capital did many of them bring to these shores, except shrewd heads and willing hands.

As some may think that I over-estimate the advantages of living in this country, I make this offer. I will give a house rent free, and two guineas a-week to any sober, industrious, first-class gardener who desires to try his fortune in our far-off land. He must thoroughly understand the care of Orchids, stove, and greenhouse plants, and must bring a recommendation for capacity from Messrs James Veitch & Sons, or some other parties equally reliable. The above wages I do not consider high, but I am not really in want of any more help, and make the offer merely in proof of good faith. I will make this arrangement for one year at least, and as a further proof of sincerity will deposit ten guineas in the hands of Messrs. Veitch & Sons, to be held by them until the year expires.—GEORGE SUCH, *South Amboy, New Jersey, U.S.A.*

MUSHROOM CULTURE.

I SEND a few Mushrooms merely as a sample of the produce obtained by a mode of culture somewhat different from the general practice.

I make the beds 1 foot deep in front, with a slight rise at the back, and in three layers, the middle one of fresh droppings from the stable, the bottom and top of droppings prepared in the usual way. The top layer is rather drier than otherwise. As soon as the bed is made and well firmed, the pieces of spawn are inserted 1 foot apart, level with the surface, with a slight sprinkling of loam. The bed is then earthed, watered with sufficient warm water to wet the soil through, and sprinkled two or three times a-week to keep it from becoming dry.

Till the beds come into bearing, and even while in bearing, I give a gentle dewing if the surface shows signs of becoming dry. With a temperature of from 50° to 55°, the beds generally come into bearing in five or six weeks.

I have used short litter and droppings shaken from the dung heap after six months for the bottom and top layers with equal success.—G. EDGERTON, *Strawberry Hill.*

[The Mushrooms were an example of very successful cultivation. They were very crowded, and being of various sizes insured a succession.—EDS.]

GALVANISED WIRE TRELLISES.

I CAN confirm Mr. J. Douglas's opinion as to galvanised wire injuring fruit trees, having had some Peach trees tied to galvanised wire, and they cankered at every place where they touched the wire. The same result occurred to some young Vines tied to galvanised wire. They were similarly cankered at every place that touched the wire.

I have never tried galvanised wire out of doors; having experienced such bad results, I should never think of trying it again in any way.—W. SUTTON, *Scrivelsby Court Gardens, Horncastle.*

In the gardens at this place there are upwards of 150 yards of wall furnished with galvanised wire, to which Peach, Nectarine, Apricot, Pear, and Plum trees are trained. I have never observed any injurious effect caused to the trees by it, and it has now been in use upwards of thirteen years. I have heard it stated that it will injure trees if used in-doors, but of that I have had no experience.—H. PERRIE, *Elsham Hall.*

ALLOW me to add my experience of the efficacy of galvanised iron wire strained to walls for the purpose of training trees.

In 1816 and succeeding years I was engaged in superintend-

ing the making of a new kitchen garden, pleasure grounds, and terraces, with walls for the purpose of growing different kinds of climbers, and we used galvanised iron wire strained about half an inch from the wall, in some cases perpendicularly, and in others horizontally. As regards fruit trees of every description, I never found any injurious effect produced by it; in fact, I am so thoroughly satisfied with it, that in my present situation, where we have been carrying out similar work, we have used it to all the walls both inside the houses and in the garden.—GEORGE LAMB, *Colston Bassett, Bingham, Notts.*

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 18th.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Messrs. Stuart and Mein, of Kelso, sent a tall Sprouting Cabbage, which the Committee considered was not of sufficient merit to be retained in cultivation. Mr. R. Tanton, nurseryman, Epsom, exhibited a seedling Potato, called *Red Surrey Kidney*, being a cross-bred between *Bratten's Kidney* and *Napoleon III.* When cooked, the tubers were of a deep yellow flesh, close texture, and indifferent flavour, and altogether were considered very inferior.

Mr. Earley, of Digswell, sent a dish of *Scorzonera*, and one of *Salsify*, both of which were unusually fine. The mode in which Mr. Earley produced them was by putting a good dressing of manure, about 3 or 4 inches thick, at a depth of 10 or 14 inches. Mr. Earley also exhibited fine specimens of *White Spanish Onion*, and a dish of *Mushrooms* containing the white and brown varieties. Messrs. Wood and Son, of Maresfield, sent what was supposed to be a seedling Apple, but which proved to be the *Winter Pearmain*, or *Duckbill*, an Apple extensively grown in Sussex. Mr. Alfred J. Clarke, of Longwood House, St. Ebbe's, Oxford, also sent a seedling Apple, which proved to be *Franklin's Golden Pippin*. Messrs. J. C. Wheeler and Sons, of Gloucester, sent a dish of fine specimens of *Asbmead's Kernel*, which were most delicious in flavour, and in fine condition. Messrs. J. & C. Lee, of Hammersmith, exhibited a fine large Apple, similar in appearance to the *White Calville*, and with the same delicacy of flesh, but without the flavour. There was some doubt as to its being the *White Calville*, and the determination of the name was reserved. Mr. John Cox, of Redleaf, exhibited dishes of *Joséphine de Malines*, *Knight's Monarch*, *Passe Colmar*, and *Old Colmar Pears*.

Mr. Tillery, of Welbeck, sent magnificent bunches of *Gros Guillaume* and *Trebbiano* Grapes, each weighing about 4 lbs. They were sent to prove that the Vine, grown on the restrictive system, was not deteriorated after nineteen years' growth, which was the age of the Vines producing these bunches. When twelve years old, the Vines were lifted from the borders and transplanted into the new gardens seven years ago; they have grown full crops for the last five years, and have continued to produce large bunches similar to those exhibited. Mr. Miles, gardener to Lord Carrington, Wycombe Abbey, sent specimens of old *Lady Downe's* and new *Black Hamburgh* Grapes, but the former were much superior to the latter in flavour. Mr. Myatt, of Deptford, exhibited three pots of preserved *Plums*, *Strawberries*, and *Cherries*, to show how well jams of these fruits keep by covering the pots with paper dipped in a solution of isinglass.

FLORAL COMMITTEE.—This meeting was one of the most interesting that has taken place. Bearing in mind the early season, and its being the first Tuesday meeting of the Society's session for the present year, it must be considered a great success. The Orchids exhibited so numerous were of the highest order: there were specimens of unusual splendour and rarity. Messrs. Backhouse, York, sent *Oncidium canthium* (?), said to be excavatum; and W. Brackston, Esq., a large specimen of *Gardneria radicans variegata*. Mr. Sherratt, gardener to James Bateman, Esq., exhibited three spikes of Orchids, among them *Odontoglossum cordatum*; and Mr. J. Hodges, gardener to E. Wright, Esq., Gravelly Hill, Birmingham, four cut spikes of Orchids, *Cattleya Walkeriana bulbosa* was very fine. A special certificate was awarded them.

Mr. C. Allen, gardener to Capt. B. Glegg, exhibited a box of fine cut flowers of *Camellias*, among them a seedling named *Miss B. Glegg*, a pretty white flower with broad carmine stripes, but deficient in outline and form. A special certificate was given to the collection. Mr. Forsyth, gardener to Baron De Rothschild, Gunnersbury, sent three fine specimens of *Dendrobium* in full flower, for which he was awarded a special certificate. Mr. Graham, Cranford sent a specimen of a *Violet* called *Victory*, a seedling from *The Czar*; it had been trained as a tree *Violet*, and bore large, purple, extremely high-scented flowers of good substance, with broader petals than any yet raised. The Committee much wished a specimen of *The Czar* had been sent with it to have compared their merits. How very interesting it would be if, at the next meeting, any person whose speciality is the *Violet* would bring a named collection of these sweet flowers. We see many new names of *Violets* advertised, but they never appear at any of these meetings. Messrs. E. G. Henderson sent a very pretty group of plants, containing a specimen of a variety of *Odontoglossum Alexandriae*. The flower of this with a rosy shade is not equal in form to many varieties that have been seen. In this collection were a variety of *Hippeastrum pardinum* with confused spots; *Camellia Florentine*, with

a soft rosy tint, something like *Valtevaredo*; and *Cypripedium Lowii*. A special certificate was given for the group.

Messrs. Veitch sent a large collection of plants, perhaps the most beautiful group we have yet seen. It contained many specimens of Orchids. The following were selected as very fine specimens, and were awarded special certificates:—*Lycaste Skinneri*, with thirty-four flowers; *Angraecum eburneum*; there was also a *Cypripedium*, probably *venustum*, with twelve beautiful flowers; *Laelia Puleheri*, one of Mr. Donny's hybrids; *Cypripedium villosum*, which also received a special certificate; *Dendrobium Hillii*; and *Hippeastrum pardinum*. The whole collection was so good, and the plants so well grown, that after the complimentary award of a special certificate had been given, the Committee recommended that a medal should be awarded to this very superb group of plants.

Mr. Weatherill, nurseryman, Finchley, exhibited a collection of *Cinerarias* of all shades of colour, some of them of great beauty; also some fine *Primulas*, and a fine lot of seedling *Cyclamens* covered with flowers, most admirably grown. A special certificate was awarded to each of these collections.

Mr. B. S. Williams sent an excellent group of plants; among them were *Gongora* species, which was much admired, *Saccolabium Huttoni*, *Cypripedium villosum*, *Hippeastrum pardinum*, and *Calanthe vestita unguis*, which received a first-class certificate. A special certificate was awarded for the collection. Mr. Stevens, Ealing, sent a small group of *Variegated Zonal Pelargoniums*, some of them of great promise, but at this season no one could presume to decide upon their merits; also some *Primulas* and *Cyclamens*. A special certificate was awarded for the three collections. Mr. Woodward, gardener to Mrs. Torr, Ewell, Surrey, sent a small group of plants of great merit, containing *Lycaste Skinneri*, *Gleichenia spelunca*, *Lomaria gibba*, and *Odontoglossum pulchellum*. A special certificate was awarded for these plants.

Messrs. Lee, Hammersmith, brought specimens of *Thujas* for comparison. They came under the different names of *Thuja Zuccarriana*, *T. laevis*, *T. virginica*, and *T. pyramidalis*. Mr. Kinghorn also brought specimens of the same. The Committee was of opinion that these apparent varieties were all forms of *Thuja Zuccarriana*, to which was awarded a first-class certificate, as a handsome and hardy evergreen. Mr. Wm. Paul exhibited *Juniperus japonica nana*, which received a first-class certificate. Inquiry was requested to be made as to its history. Messrs. Lee also sent *Eonymus japonicus elegantissimus argenteus*, which received a first-class certificate, being a very ornamental and hardy plant. Messrs. Smith, Dulwich, sent a specimen of a double red *Azalea*, *François Deslois*, the colour rather dingy; also, some curious seedling *Primulas*, which it was requested should be sent again, and a dwarf double reddish variety. Mr. Wilson, gardener to W. Marshall, Esq., sent a very nice, though small, collection of Orchids. Among them was a fine specimen of *Odontoglossum Alexandriae*, the spike of which, by Mr. Marshall's kind permission, was cut after the meeting, and sent to Her Royal Highness the Princess of Wales. An unusually fine spike of *Vanda gigantea* was sent with these Orchids. *Oncidium leopardinum* received a second-class certificate; others being *Odontoglossum Marshallianum*, nearly resembling *Odontoglossum radiatum*, and a most beautiful Orchid, and *Cattleya amethystoglossa*. A special certificate was awarded them. Mr. Taplin, gardener to the Duke of Devonshire, exhibited the finest specimen *Cologyne cristata* ever seen. This most superb specimen was recommended for the Lindley medal. Mr. Taplin also brought a small raceme of *Amherstia nobilis*, a splendid flower. Mr. Standish, Ascot, exhibited a very handsome seedling *Rhododendron*, from *Boottan*. Some doubt existed about its origin and name. It appeared to be much like *argenteum*, or very nearly allied to it. A special certificate was awarded. Mr. Mills, gardener to Dr. Pattison, sent a specimen of *Odontoglossum Bluntii roseum*, a very pretty variety; and Mr. Earley, gardener to F. Pryor, Esq., of Digswell, a cut specimen of an old plant, *Tenorium frutescens*.

GENERAL MEETING.—W. Wilson Saunders, Esq., F.R.S., in the chair. After the election of twenty-seven new Fellows, the Chairman remarked that the Society had on that day commenced a new session, and under circumstances more favourable than in previous years. If in these greater advances had not been made, it was no fault of the Council, for they had not the necessary funds, but this year it would be found that there was every disposition on the part of the Council to spend as much as they could in the encouragement of good cultivation and new plants. Much of the scientific part of the work of the Society was brought out at the Tuesday meetings, and at these the Fruit Committee and the Floral Committee did their work well, and these meetings were also the means of drawing from the Society's botanical adviser, the Rev. Mr. Berkeley, much useful information in connection with the subjects exhibited. He (Mr. Saunders), on the part of the Council, would urge the Fellows to bring to the meetings all that might be interesting in their gardens, and especially out-door plants, to which of late years it had not been the fashion to pay the same amount of attention as to the inmates of the stove and greenhouse. Many heraceous plants, for instance, are of exquisite beauty, and, requiring very little care in their cultivation, are suitable for the gardens of the multitude, and he was very anxious that they should be more generally grown. Numbers of beautiful out-door plants formerly in gardens, had been allowed to go out of cultivation, and were now only to be found in books, but he would be glad to see them back

again. Among hardy plants not met with at exhibitions were climbers, of which many are very beautiful. He admitted there was great difficulty in bringing them to shows; still, he believed that might be overcome. There were no plants, however, which he wished more to see brought to the meetings than those stove plants which might be used for bedding-out in the summer months, as at Battersea Park. Already a large number of stove plants were so employed, but many more might be added, that required little more trouble in their cultivation than a Scarlet Pelargonium. They would not stand the winter, but why might we not enjoy them in summer? They would be a good addition to our coloured plants—a direction in which we had gone a little too far in flower gardens. He did not want to run down the beautiful bedding plants now employed, but the eye becomes satiated with colour; and what we want is variation, and that we might obtain by elegance of form. The number of plants capable of being brought to bear on this object was wonderful.

There was one other subject to which he would allude—namely, the better education of young gardeners—a subject of great importance at a time when so many new plants are being introduced every year. The higher branches of horticultural knowledge were particularly necessary for those who had to grow them. Without a knowledge of plants, without a knowledge of temperature and the hygrometrical state of the atmosphere, it was impossible to cultivate these plants properly, and many of them were consequently lost. The Council would do all in their power to promote the better education of young gardeners, but he would urge masters to allow young men time, and especially those of them who exhibited a taste for high-class horticulture, to gain a knowledge of the important subjects connected with it as far as practicable.

The Rev. M. J. Berkeley congratulated the members present and the Society at large on the exhibition of that day. He was present at the meeting of the 19th of last February, but the present display far excelled it in point of variety, beauty, and interest. Among the plants at the present meeting Orchids took the lead, and foremost among them was the noble specimen of *Cyclopis cristata* from Chatsworth, which for size and beauty was the finest ever exhibited before the Society. As compared with another specimen of the same species in the room it was in a high state of vegetation, the pseudo-bulbs showing great luxuriance of growth, while in the other plant they were dwindled and angular. Next came the collection of Messrs. Veitch, in which it would be difficult to point out one plant better grown than another. He would, however, especially notice the magnificent specimens of *Augreum eburneum* and *Lycaste Skinneri*, the latter with thirty or more flowers. Of *Oncidium abortivum* a fine specimen was shown at the other end of the room. There had been on several occasions small specimens of this sent, and they attracted very little attention; but any one seeing the plant as shown that day would agree that it is most elegant. The peculiarity of this *Oncidium* was that a few of the flowers were normal, but the rest were without a trace of the column or parts of fructification. The beautiful *Dendrobium* from Baron Rothschild, at Gunnersbury, were then spoken of in high terms, after which Mr. Berkeley referred to a specimen of *Cypripedium villosum* almost entirely destitute of lip, and said that he had met with several instances in which this species had produced flowers exhibiting this peculiarity—that of the lip being reduced to a little curl beneath the column. From Mr. Williams came another plant of extreme interest, and to him (Mr. Berkeley), of extreme beauty, a species of *Gongora* in which the flowers were like carved ivory. There was also from the same exhibitor a little plant of *Saccolabium Huttoi*, which is the same as *Aerides Huttoi*, figured in the "Botanical Magazine." Attention was then directed to the Violet, called *Victory*, from Mr. F. J. Graham, and Mr. Berkeley remarked that though the *Czar*, which has coarse foliage, long stalks, and large flowers, was extremely sweet, *Victory* was even sweeter, and most persons who were conversant with Violets considered it an improvement on the *Czar*. *Leucocarpus alatus*, a plant with white berries, shown by Mr. Wilson Saunders's gardener, was next noticed, and it was stated to be a native of Vera Cruz and the West Indies. It was not a new plant, having been figured many years ago in Sweet's "Flower Garden." If one of the berries were cut across it would be found to be similar in structure to those of *Digitalis*. The plant, from the long time it continues covered with its berries, would be valuable for spring decoration. Two other valuable plants for the same purpose were *Lopezia racemosa* and *coronata*, which had been introduced more than forty-five or fifty years ago, and of one of which he held up a plant to show how ornamental it is when covered with its numerous red flowers. The plant did not flower in the open air, but cuttings taken of it in autumn and struck, made extremely pretty plants for spring decoration. The splendid collections of *Primulas* and *Cinerarias* from Mr. Weatherill were then adverted to, as well as the *Thuja* referred to in the Floral Committee report, and which proved to be *Thuja Zuccariniana*, an extremely hardy and very beautiful species.

Mr. Berkeley then read an extract from a letter from Lord Dunraven, stating that he was in great trouble, owing to a grey lichen which overran the Oaks in his woods to such an extent as to do them great injury, and not only Oaks, but Elms and Thorns as well, in every part of his domains. The lichen, Mr. Berkeley said, was probably *Evernia prunastri*, and in all probability if the ground were well drained it would disappear. Another matter to which he wished to refer was of interest to those who are fond of *Anaxetels*, and who

know how difficult it is to grow them, except under shaded bell-glasses or glass cases. When at Kew lately he found there practised a mode of cultivating these beautiful plants which is different from the common one. They were grown under bell-glasses, one half of which was green, the other half white; the green-coloured portion of the glass affording the necessary shade, while through the transparent portion of the bell-glass the beauties of the plants could be seen. This mode of treatment, he added, had proved extremely satisfactory.

The Chairmen of the Floral and Fruit Committees having reported the awards,

Mr. Wilson Saunders said that in connection with lichen covering trees, he would mention that ten years ago he took an orchard in clayey ground, and finding the trees covered with lichen like the wool on a sheep's back, he saw there were but two courses open to him—cutting down the trees or experimenting. He employed some ordinary labourers to take all the moss and lichen off the stems and branches, and had the whole of the trees painted with a mixture of lime and soot; he had the sod taken off round the trees, and the soil manured well; he then drained the orchard, and last year and the year before it had produced excellent crops.

Mr. Berkeley said that a short time ago he had received from Italy a specimen of a lichen which was destroying the Pines there, and which proved to be *Usnea barbata articulata*. It hung down from the trees in pieces 1½ foot long. Referring then to the mode of destroying the lichen adopted by Mr. Wilson Saunders, he said that though applicable to an orchard it was not so to a large forest like Lord Dunraven's. He recollected the case of an orchard in which were some scarce sorts which it was desirable to save, and the lichens being scraped off the trees, even from every little twig, the result was the entire rejuvenation of the trees.

Even although the afternoon was anything but favourable, there was a better attendance at the Meeting than usual at this early season, and the only regret expressed by those present was that so many of the Fellows had missed so excellent and instructive a display.

IS A DRY OR MOIST ATMOSPHERE THE MORE CONGENIAL FOR SETTING MUSCAT GRAPES?

ONE of your correspondents advocates the keeping of a Muscat house very moist—in fact, to withhold no more moisture at the blooming period of the Vines than at the growing season. I think that is different from the usual practice of our great Grape-growers; I know it is contrary to my practice and experience. Another will guarantee a well-formed bunch, and of course finely set with berries, with a house kept dry, except in respect to a slight sprinkling morning and evening. Which is the road to success, a dry temperature or a humid one? At what time does the adherent to the steaming process have his Grapes ripe? Perhaps he will give some further light on his system of Muscat-growing.—Nemo.

CORDONS.

THE introduction of this word into our fruit-tree vocabulary will puzzle many gardeners who are unable to see any difference between it and our old espalier system of training. No amount of quotations from Du Breuil, or any other French horticultural writer, will make them believe that a branch of a spurred-in fruit tree, whether trained horizontally or vertically on walls or espaliers, is anything else but a cordon. I have no wish to disparage our ingenious neighbours across the Channel for the many fanciful modes of training fruit trees which they indulge in, but some twenty-five years ago there was a great *furor* about a new system of fruit-tree training, introduced from them, and called "*en quenouille*." Fruit trees trained on this system looked very graceful, and bore good crops in favourable years; but young trees are seldom now trained so, either in nurseries or gardens. Whether the name was too difficult of pronunciation, or the training took up too much time, matters not; the fact is as I have stated it. The only use of the so-called small cordons, whether single or double, would be to plant at the bottom of our fruit-tree walls, and I have no doubt that the very best of Pears and Apples could be grown on them. These small trees could be planted between the existing wall trees, and would not interfere with them when trained so low down. I had specimens of *Beurré Clairgeau* 1 lb. in weight each, grown last autumn on a small double cordon, and from being so near the ground they were beautifully coloured. As to growing cordons as edgings to fruit borders, as they do in France, I am afraid our climate is not suitable, from our late spring frosts.

A mode of training Pear and Apple trees was practised by the late Mr. Mearns when gardener at Welbeck, which I believe

would be found preferable to the small cordons for the sides of borders in the kitchen garden. Three larch poles were driven into the ground, and at about 4 feet high the tops were

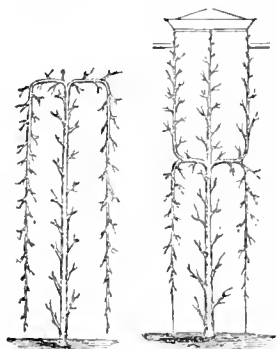


Fig. 1.

Fig. 2.

Pear trees to plant on the square pillars in the new kitchen garden, where they are trained as in *fig. 2*.

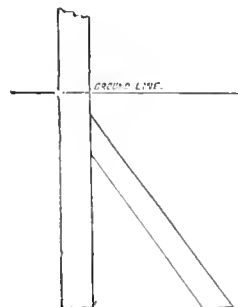
There is no finer sight in a kitchen garden than a long range of walls well covered with fan-trained trees of Pears, Cherries, Plums, and Apricots. Perhaps for low walls, trees trained horizontally are the best adapted, and on dwarf-growing stocks. As there is such a rage at the present time about training fruit trees, allow me to conclude with the following triplet in rhyme, which I think is particularly adapted for the subject:—

"How strange that such a difference should be
'Tween tweedle dum and tweedle dee,
In nanning, pruning, and training a tree."

—W. T.

STRAINING WIRES FOR DIAGONAL CORDONS.

For a length of 100 feet of diagonal cordon wires, the two end posts should be of stout oak about 4 feet out of the ground, and sunk to a depth of 2 feet, strongly supported by an auxiliary stud as in the accompanying representation. Midway between these two straining posts another stout oak post should be put in, to give strength and solidity, and at intervals of 7 or 8 feet light iron supports are necessary to keep the wires in position.



For posts 4 feet high three rows of wires only are really necessary, and these should be placed 1 foot from each other, the lowest being 2 feet from the ground line; but a fourth wire 18 inches from the surface of the soil may be added

with considerable advantage to the planter. This supplementary wire will sustain bilateral or double cordons without any prejudice to the diagonal cordons. They should not, however, be planted in the same row, but inserted at intervals on the opposite side.

A space of ground 100 feet by 6 feet will hold three rows of straining wires for diagonal cordons; and the distance between each being 3 feet, a sufficient space is afforded for the passage of an ordinary-sized wheelbarrow, which is required for the purpose of surface-dressing the trees in spring and autumn. The number of trees which can be successfully planted as diagonal cordons would appear to an old-fashioned planter incredible and absurd; 300 feet of wire will hold 150, and a supplementary row of bilateral cordons. Supposing that dwarf Pear trees on the Quince stock one year old are planted, the produce will be gathered the second year after planting; and if the season is favourable each tree will at this early period average one dozen fruit each of very fine quality—not a bad return for good cultivation.

I ventured during the summer of last year to write a short letter to the *Times*, which the Editor did me the honour to publish, pointing out that fruit trees might be planted by the thousand in spaces of ground now given up to hundreds; but in this letter I suggested the planting of pyramidal trees on a large scale, and I did not allude to cordon trees for gardens.

Your readers can calculate the number of diagonal cordons which may be planted per acre in rows 3 feet apart, and 2 feet tree from tree in a row. I do not, of course, suggest the advisability of covering acres of ground with training wires; but I think the system may be adopted by, and will prove very profitable to, many a small market gardener in the neighbourhood of large towns who cannot afford the ground requisite for planting pyramids, and who will find that by exercise of judgment in selecting the positions, and care in cultivation, unproductive borders may be made to contribute their share to the returns of the year.—T. FRANCIS RIVERS.

WALL COPING

As you say that you wish correspondents to give their experience of wall copings, I beg to send you a slight sketch (*fig. 1*),

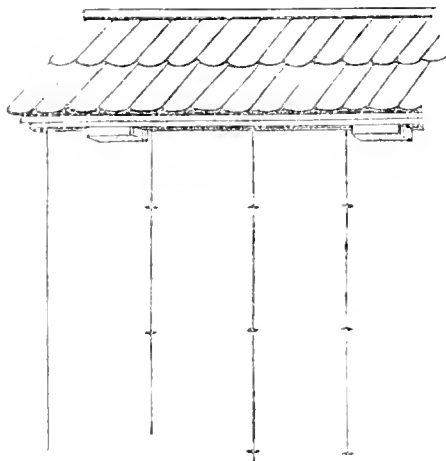


Fig. 1.

and section (*fig. 2*), of a wall coping that my father put on his wall some years since. As he could never depend on having any Peaches before it was done (the wall being raised at the same time), and now with the aid of a wash painted on the trees in March, he never fails in having a plentiful crop, it is, I think, worth while to draw your attention to it.

The wall is 12 feet high, and is roofed with Bridge-water tiles resting on a rafter running parallel with the wall, and supported on brackets built into the wall as shown in the section. The projection of the roof is 10 inches. The wall is wired, and the shoots are always tied with the Golden Willow. This plan certainly has the advantage of keeping the wall very sound and affording no harbour for insects, as is the case in the old nail holes, where nails are used. The crop of Peaches last year, when in this neighbourhood there were a good many failures, was a perfect sight.

I may also add in reference to the subject brought forward by your correspondent "H. B.," in page 411 of the last volume, that we fence round young trees in the plantations with short pieces of Elder stuck into the ground to prevent them being injured by rabbits, and the plan has been found very successful.—A SOMERSETSHIRE PARSON.

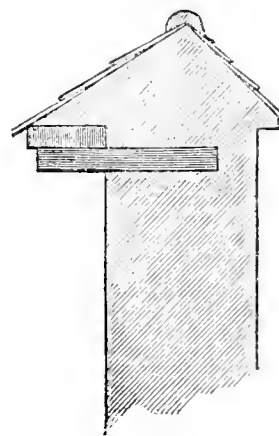


Fig. 2.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Broad Beans, as soon as the plants of the early crop appear above ground the soil should be carefully ridged up round them, and branches of evergreens stuck in rather thickly on

each side of the rows to afford protection from frosty winds. *Carrots*, sow some approved early sort now, if the ground is in fair working condition, on a warm, sheltered border. *Leeks*, to grow them to perfection, a deep and rather strong loamy soil, highly enriched with manure, is essential. Heavily dress the ground, therefore, with rich, well-rotted manure, and trench to at least a depth of 2 feet. Some growers dig out narrow trenches and fill-in with manure, as is done for Celery; but except with very light, poor soil this is unnecessary. Sow now, if the ground is in good working order, on a bed of rich, well-pulverised soil, scattering the seeds very thinly, and covering them lightly. Choose a well-sheltered sunny situation, and in cold localities it would be advisable to raise the plants in a cold frame, and transplant them in April. *Onions*, the main crop should be sown now that the ground is in good working condition. A rather deep and rich loamy soil is most suitable for this crop; where very large bulbs are desired, soil of this character is necessary. Onions grown in a strong soil are much less liable to be attacked by the maggot than in light, dry, sandy soils. *Parsnips*, sow now in lines from 18 to 20 inches apart, scattering the seeds thinly, and covering them from half an inch to an inch deep with the finest of the soil. Parsnips succeed best in a deep rich soil; and as the application of manure tends to produce forked and badly-formed roots, ground in good condition which has been manured for the previous crop should be selected. The ground should be trenched 2 or 2½ feet deep before sowing.

FRUIT GARDEN.

Take every favourable opportunity to finish pruning, nailing, and washing or painting all sorts of fruit trees, with the exception of Peaches and Apricots. In the case of the Vine, if not cut in autumn, pruning must not be delayed.

FLOWER GARDEN.

Auriculas may be kept moderately moist; if top-dressing has not been done as before directed, let it be done immediately. Look well to *Polyanthuses*. As spring advances the snails become proportionably troublesome; diligently trap them. Plant *Ranunculuses* without delay. The compost necessary is equal parts of leaf mould and loam which has been previously exposed to the action of heat to destroy the eggs of insects, &c., contained therein. Should any soil have lodged in the axils of the leaves of *Carnations*, it is necessary that it should be removed. A quill, with the feather stripped off on one side and cut half off on the other, makes a simple but effectual brush with which to perform this operation, and by timely looking through the stock disease may be prevented. Edgings of various kinds may now be planted, such as Box, Thrift, Daisies, London Pride, or *Gentianellas*. If a few forward patches of *Crocuses*, *Van Thol Tulips*, or *Anemones* in the borders are taken up about this time and carefully potted without much disturbing the roots they will flower beautifully. *Hyaacinths* in glasses will now be showing bloom, and must be carefully attended to. Instead of growing these in glasses I would prefer raising them in pots in the usual way until the flowers begin to show colour, when the bulbs may be gently shaken from the soil, and the roots having been washed in lukewarm water, placed in glasses filled with water of the same temperature. The bulbs will flower as strongly and well as if they had never been moved, and this practice prevents the flower from being drawn, the bulbs from rotting, and the roots from decaying, as often happens when they are grown in water from the commencement.

GREENHOUSE AND CONSERVATORY.

Where large collections of house plants are cultivated, repotting takes place every month in the year, but from this time till August is, in general, the principal period for this work. Many plants may now be safely repotted; early in spring the rule of seeing the roots growing freely is the best guide for beginners. Many plants will begin to grow at the top before their roots are in action, yet they do not require to be repotted; they are either too much confined, or under a higher temperature than they require at this time. *Orchids* from the more temperate regions are often much injured by a high temperature when they begin to grow. *Euphrasies*, *Heaths*, and others of the more hardy plants, in or coming into flower, should be kept near the source of ventilation; while *Roses* and other forced flowers fresh from the forcing pit require the warmest part of the house, and ought to be kept free from currents of air at first. This is a good time to make memoranda of the best varieties of forced bulbs, especially *Hyaacinths* and *Tulips*. The nights are still too long to allow any syring-

ing in the conservatory in the afternoon, but such plants as are not in flower, and all vacant spaces in the house, should be sprinkled two or three times a-week, and this should be performed early in the day. The plants in the greenhouse may now have a slight syringing in the afternoon, and air may be freely admitted in all fine nights. Some young plants may want repotting. If some are growing freely at the top, and the roots are not in action, the house is too hot for them and you must remove such plants to a cooler place. Attend to neatness in all the houses, and make it a rule never to pass a pot-plant through your hands without removing all yellow or injured leaves if there are any, also all insects that may exist on it, as well as weeds growing in the pot. *Pelargoniums* that are growing rapidly may now be repotted; the tops of the young shoots should be pinched off so as induce them to throw out laterals that they may be rendered dwarf and bushy. Old plants of *Musk* may now be turned out and repotted in fresh soil, using rich, rather stiff loam for the purpose. A few of the old roots that will be found on the outside of the ball should be placed regularly over the surface of the pot and covered about half an inch deep, leaving room for water, which must be given freely when the plants begin to grow.

STOVE.

Another crop of dry bulbs and roots might now be started into growth for a successional bloom. It is too soon yet for potting to any extent if the *Orchids* are finished. A few plants here and there may, indeed, be so forward in their growth as to require fresh pots.

FORCING PIT.

This is a good time for propagating many plants by cuttings, by grafting, and by seeds, and the forcing pits are the best places for this work. Seedlings already up ought to be potted-off as soon as they can be safely handled. Foreign seeds had better be sown in 32-sized pots, putting four or more kinds into one pot, and placing labels in the middle facing the different seeds. Less water will then be needed than if each kind were sown in a small pot, and the less water given to doubtful seeds the better chance they will have to germinate. Let every shelf and corner of these useful pits be filled with plants as others in flower are removed from them.

PITS AND FRAMES.

Gardenias, *Roses*, and other plants for forcing will be removed from these to the forcing pit as they are wanted for succession, and their places may be filled-up with return plants from the conservatory which have done flowering. The rest of the permanent occupants require only to be protected from frost, cutting winds, and heavy rains.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The work has been much the same as in previous weeks with one exception, that of potting a lot of *Dwarf Kidney Beans*, and placing them on shelves in a pit, so as to be equally distant from the glass. For early forcing we prefer pots, as they can be moved as may be necessary, and we prefer planting to sowing at once, as room is saved in the first instance: otherwise time is saved by sowing or planting five or six seeds in a 10-inch pot, three parts filled with fresh light rich soil, and earthing-up afterwards. In growing *Kidney Beans* in a pit we frequently plant first in rows 2 feet apart, when the plants are strong earth-up a little, when they are producing sow again in the furrows, and by the time the latter plants are up and becoming strong, we pull out the first crop and give the second the room, and so sow for four or more crops, giving some rotten dung after the first two crops.

The advantage of growing *Kidney Beans* in a heated pit is, that there is no chance of introducing thrips with them into such structures as vineries and Peach houses. We find in pits that soot water, clear, and at times weak clear sulphur water, used as syringings, will generally keep them free of this their great enemy when fire heat is used, and the syringing cannot be so well done in houses where the Beans are merely a very secondary crop.

It is difficult to decide at times where the thrips come from that will attack the foliage of a *Kidney Bean* plant. In a pit thoroughly cleaned previously as far as we know how, with smoking, washing, lime-washing, and all heated alike, we have put temporary divisions of thin wood, or even of calico, or a mat, and given a different temperature to each division by merely a different regulation of air-giving, and in these diffe-

rent divisions we have had Pelargoniums, Strawberries, Potatoes, and other crops, and all perfectly healthy and clean; still the thrips would begin to show on the Beans by the time they began to produce. We have known instances of gardeners placing a few pots of Kidney Beans in a house as a sort of test or trap for thrips, and whenever any showed themselves, moving the pots out with extraordinary care. When the insects are young this may be safely done; but when full grown it is difficult to get rid of them, they jump so when approached or disturbed. Tobacco smoke in repeated doses will kill them; but it is better in every way to keep them away, than to destroy them after they appear.

Forced vegetables and out-door work much the same as last week, only we have learned that it is desirable to have frequent successions of Sea-kale and to grow it rapidly, as we hear that when it is a long time growing it requires much more boiling because it is much harder. This is a matter that was rather new to us, as Sea-kale in winter was more found fault with on account of being soft and watery, than for its hardness or compactness.

FRUIT DEPARTMENT.

In addition to the matters alluded to last week, we may mention that from frames and orchard houses we introduced a good many *Strawberries* into the houses and a brick pit, placing the pots on a shelf, where drip would be unsuitable in small saucers, and the others on reversed turf on shelves, or on a little leaf mould, with moss below it. From frequent experience, and, perhaps, more especially from that of last year, we would advise that all Strawberry pots for the best part of a month to come, be placed on shelves with merely a thin turf, or a little moss below them, instead of in a raised bed, with a good thickness of mild fermenting material beneath them. From the force of circumstances, we were obliged to use a bed, with a good thickness of decayed leaves on the surface last season, and no plants could have looked better, but the fruiting did not meet our expectations. To keep such plants right they would require to be lifted every day. They very soon root through the pots, and if in bloom, and not lifted for weeks, they would be checked if lifted, and after that the rooting in such material is apt to encourage fine foliage instead of large, well-swelled fruit. Such a bed does admirably if the plants are set on boards, slates, or tiles, with a sprinkling of leaf mould on these to hold a little moisture about the bottom of the pot; but we have often proved that the free going out of the roots into a bed of leaves or leaf mould in January and February, does more to encourage foliage than fruit. When the days grow longer, the sun more powerful, and the plants are not too close together, the plan answers very well after the middle of March. We have found it answer especially well when the fruit was set, or setting, before the plants were thus placed in a material in which they were tempted to root freely. In such a case the fruit had the benefit of the increased vigour, at least a fair share of it.

Air-giving.—We allude to this, because in the last line of the second column, page 139, we meant to say, "When we first managed houses on our own account, we went regularly out to attend *divine service* every Sunday forenoon, and we never had a single mischance from overheating, or too little or too much air, on these occasions." There could be nothing particular in this result, if we attended the houses regularly in the forenoon. We wanted to show to amateurs, that by proportioning heat to light, preventing strong fire heat and powerful sun heat acting on a forcing house at the same time, and giving air early in small quantity, rather than a larger quantity later, the heat of the house would rise and fall gradually within the points of perfect safety, and no casualty would occur, though left to itself for hours. Vineries were often thus left, though forced early, from 9.30 to 1 p.m., and often no change was made until the houses were shut for the night. Of course, they were looked to, and the heavens scanned just before leaving, and immediately on returning; but although like others we could see our failures, we never had one then from that cause. So long as the expense of fuel prevents many of us from keeping on a little air at night even, we would say that air-giving early in the morning is more important than the quantity during the day.

ORNAMENTAL DEPARTMENT.

Will turn over the flower beds already ridged, and dig over larger beds and borders on the first opportunity, and will take the chance to divide stools of herbaceous plants.

Planted Pinks and Carnations well established in a border in the kitchen garden, being afraid to trust them beyond the

walls, as hundreds or thousands of Wallflowers in the pleasure grounds show nothing but a stump of their stems. Dahlias we shall place on the floor of a vinery to come on gently, as we cannot spare a bed for them, though a slight hotbed is the place when much increase is desirable, so as to have fine shoots quickly. Tulips appearing should be protected with little mounds of sand or burnt earth. Crocuses are not beyond the nibblings of the mice; when more grown they seldom touch them. Mice are more easily poisoned than rats. We destroyed a good number of the latter lately by placing poisoned mashed potatoes and oatmeal in holes, and under litter and branches, where no fowls or pheasants were likely to go.—R. F.

COVENT GARDEN MARKET.—FEBRUARY 19.

WE have no alterations to report. Supplies continue good, and the demand is fair.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	2	6	4	0	Melons..... each	2	0	3	0
Apricots doz.	0	0	0	0	Sectarines..... doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges..... 100	3	0	7	0
Chestnuts..... bush.	8	0	14	0	Peaches..... doz.	0	0	0	0
Currents..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	4	0	8	0
Black..... doz.	0	0	0	0	Pine Apples..... lb.	6	0	8	0
Figs..... doz.	0	0	0	0	Plums..... ½ sieve	0	0	0	0
Filberts..... lb.	1	0	0	0	Quinces..... doz.	0	0	0	0
Cobs..... lb.	1	0	0	0	Raspberries..... lb.	0	0	0	6
Gooseberries .. quart	0	0	0	0	Strawberries..... lb.	0	0	0	0
Grapes, Hothouse, lb.	7	0	10	0	Walnuts..... bush.	10	0	16	0
Lemons..... 100	8	0	12	0	do. per 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes..... doz.	3	0	2	0	Leeks..... bunch	0	3	0	0
Asparagus..... 100	7	0	20	0	Lettuce..... per score	1	0	1	6
Beans, Kidney..... 100	0	0	3	0	Mushrooms..... pottle	1	0	2	0
Beet, Red..... doz.	2	0	3	0	Musd. & Cress, punnet	0	2	0	0
Broccoli..... bundle	0	6	1	6	Onions..... per bushel	3	0	5	0
Brns. Sprouts ½ sieve	0	2	0	6	Parsley..... per sieve	4	0	5	6
Cabbage..... doz.	1	4	2	0	Parsnips..... doz.	0	9	1	0
Capsicums..... 100	0	0	0	0	Potatoes..... bushel	4	6	5	6
Carrots..... bunch	0	6	0	8	Kidney..... do.	4	0	6	6
Canflower..... doz.	3	0	6	0	Radishes doz. bunches	1	0	1	0
Celery..... bundle	1	6	2	0	Rhubarb..... bundle	0	9	1	0
Cucumbers..... each	3	0	4	0	Savoys..... doz.	1	0	2	0
Endive..... doz.	1	0	0	0	Sea-kale..... basket	2	0	3	0
Fennel..... bunch	0	3	0	0	Shallots..... lb.	0	8	0	0
Garlic..... lb.	0	8	0	0	Spinach..... bushel	2	0	4	0
Herbs..... bunch	0	3	0	0	Tomatoes..... per doz.	0	0	0	0
Horseradish .. bundle	2	6	4	0	Turnips..... bunch	0	4	0	6

TO CORRESPONDENTS.

*. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

BOOKS (*R. M. H. P.*)—The volume on laying out gardens will be published this coming spring. We cannot tell where the *Phacelia* is to be obtained. Apply to the leading seedsmen.

GALVANISED WIRE (*H. H.*)—Any one of those who advertise it in this Journal can supply you.

ROCKWORK (*Idem*)—In Nos. 214 and 216 are directions for making rockwork. In 321 is a list of rock plants. If you enclose twelve postage stamps, ordering them, and stating your direction, you can have them free by post.

TULIP-WOOD (*L. H.*)—We believe that the wood so called and employed by cabinet-makers for veneering, is the wood of the *Liriodendron tulipifera*, or Tulip Tree. At all events the wood of this tree is used for carving and other ornamental work, and for house furniture.

VINES FOR EARLY FORCING (*Tork*)—Have two Vines of each of the following:—Black Muscat of Alexandria, White Frontignan, Black Hamburgh, and Buckland Sweetwater.

ARAUCARIA CUNNINGHAMII SINENSIS.—"In answer to your correspondent 'L. X.,' (see page 119), I am informed by Mr. Smythe that during the first five years the tree in question received no protection whatever, but the severe winter of 1869 killed to the ground large plants of *Araucaria imbricata*, together with Portugal Laurels, the latter supposed to have stood for at least one hundred years. It was then the wish of the proprietor (Lord Soudes), that they, with other small plants of *Araucaria imbricata*, should have the protection of a few sparse boughs which they have since annually received, not that their hardiness is in question, but as a precaution and to make assurance doubly sure.—THOMAS WISEWORTH, Elmham Gardens."

GARDEN PLAN (*A Constant Subscriber*)—Write to Mr. Chapman, Landscape-gardener, Hermitage Road, Richmond, S.W.

PHALANOPSIS SCHILLERIANA (*H. M. G.*)—By putting a little damp moss to the excrecence at the joint on the stem, your hope of a young plant would amount to a certainty. The spike is a very fine one. You can have covers for the last four volumes of the Journal, which will be sent on receipt of 4s. 10d. in postage stamps, along with your address.

VINE EYES FAILING (An Anxious Inquirer).—To root successfully they must be put in before the time you name, and have bottom heat. We should attribute the failure to their being put in late, and to a deficiency of heat. We would advise you to try cuttings without loss of time. If you can have a hotbed put in eyes now, and plunge the pots in it, and then we think you will be successful.

APPLE TREE TRAINING (Idem).—To form pyramids, you should in autumn head down the tree grafted in spring to within 12 inches of the place where it is grafted. From the shoot thus cut back several shoots will proceed; train the uppermost erect, and allow the others to grow; but if disposed to grow erect they should be tied down, and so as not to have all the shoots on one side of the tree, but equally disposed all round. In tying be careful not to break the young shoots. When the leader has grown 12 inches you may take out its point at that height, and it will push again. In September the side shoots, if they are more than 1 foot in length, may be shortened to that; but shoots of less length than 12 inches should not in any way be interfered with beyond tying them down so that they will appear to proceed from the stem nearly horizontally, but with their ends inclining upwards at an angle of about 45°. In autumn, after the leaves have fallen, cut back the leader to 12 inches if it has made more than that length of fresh growth since it was stopped in summer, otherwise it must not be cut back, but in the summer following the leader must be stopped when it has grown 12 inches above the last side shoot. By the above process you will obtain ample side shoots for a well-shaped tree, care being taken to train them judiciously with an eye to the producing of a tree well balanced as regards its shape from whatever point it is viewed. You must not rub off the blossom buds on the central shoot or leader, but leave them, and let them fruit, taking care not to allow too many fruit to remain upon a tree. Half a dozen will be ample, but not too many. If your trees have no side shoots beyond one here and there, your best plan will be to head the central shoot back to a wood bud 12 inches above the place where there is a sufficiency of side shoots, and proceed as stated above.

MUSA SUCKER (Musa).—You may with safety to the parent plant remove the sucker 3 feet high, and instead of its injuring the old plant it will contribute to its vigour. In taking off the sucker be careful not to injure the roots of the old plant, but take away as much soil as you can, so as to remove the sucker with some roots, and without breaking it; forcibly and sharply pulled, it will snap off at the surface like a carrot. The sucker should be potted, and if possible give it the benefit of a mild hotbed, otherwise it will succeed in a house with a brisk heat and a moist atmosphere. The sucker may fruit in two years, more or less according to treatment; the old plant should fruit within twelve months.

ASPARAGUS CULTURE (C. H. S.).—The culture of blanched Asparagus, such as the French send to market, is treated of in page 45, and instructions are given for preparing and planting the beds in page 22 of our present volume, and pages 449 and 441, No. 353, of our last volume.

FRAME LINING (Idem).—Instead of an outer wood frame to keep up the litter, we would advise a hole to be made 2 feet wider than the frame all round, and 2 feet 6 inches deep, and then to run a 4½-inch wall all round up to the ground line. You can then make your bed for the frame, leaving for a lining a cavity all round, which can be filled at will or as required, and as it sinks it may be added to. Wood is too liable to decay to be used where bricks can with greater advantage be employed.

PRUNING (S. D. R.).—You should not lose any time in pruning the Gooseberry bushes, and all kinds of fruit trees should be pruned at once, and completed as soon as possible. The Gooseberries, having been much neglected, we presume are very full of wood, which we would advise you thinning well out, cutting all the side shoots on the branches left to within an inch of their base, and reducing the terminal shoot of each branch two-thirds its length. "Fruit Gardening for the Many" would suit you. You may have it free by post from our office if you send five postage stamps with your address.

PEACH TREES FOR SOUTH WALK (Idem).—Three good Peaches are Early York, Grosse Mignonne, and Barrington. In ordering the trees we should state that we required good, dwarf, fan-trained trees of the sorts named, and to be two or three years trained, clean, and healthy. We would advise fan-trained. We recommend short pruning—i.e., summer-pruning for the Peach. You may practise short pruning on all your old Peach trees with advantage, thinning out the old branches, and leaving the best of the young shoots for training in their place if necessary.

PLUMS AND PEARS (Idem).—Three good Plums; Jefferson, Cox's Golden Drop, and Green Gage. Two Pears; Marie Louise, and Glou Morceau. The old Plum trees we would not cut down, and you must not cut back the old spurs to within a short distance of the branch whence they proceed, unless you leave some young wood below the point where cut. We would thin the spurs and shorten them to some extent, leaving, however, a number close to the branch, and always a growing point or shoot, though short, below the pruning. If the trees are worn out replace them with others. You may cut back Currant bushes against a wall; but you must do it to where there is a young shoot, or young wood to furnish a shoot or shoots to train in place of the one removed.

FORMING A HOTBED OVER A FLUE (Subscriber).—Your chance of striking cuttings in pans placed over the flue would be small, but you might have a box made to place upon it, say 2 feet wide, 15 inches deep, and of any convenient length, and cover this with a glazed light, hinged at the back, so as to be easily raised. This box we have no doubt would answer well, indeed we have used such with good results. If the flue is hot at the part where the box is to be fixed, a fluestone should be placed beneath the latter; or if the box is too wide for the flue, you may place it upon slates or flags. At the bottom of the box, you may put from 1 to 6 inches of stones on pieces of bricks or crocks, and cover them with a thin layer of moss or cocoa-nut fibre, and then with 4 inches of soil or sand, or other loose materials wherein the cutting pots or pans can be plunged. In a day or two the box will be ready for the cuttings, and these being inserted the light may be closed, and the atmosphere of the box kept close and moist. With shade from bright sun you will have well-rooted cuttings of Verbena in a fortnight, and of bedding Pelargonium in from three weeks to a month. A little air should be given if necessary, to keep them from damping-off, and to regulate the temperature, which may be from 60° to 55°.

PRIMULAS (Idem).—Primulas should be kept moist, but they ought to require water before any is given, and then afford a good supply, and before they flag. As a rule they should be kept rather dry in winter, but

still the soil should be moist enough to promote a healthy slow growth. They succeed admirably in a cool airy greenhouse, having a night temperature of from 40° to 45° in winter, and should be kept near the glass, and not be watered overhead. A compost of one-half turfy light loam, one-fourth sandy peat, and one-fourth leaf mould, with one-sixth silver sand will grow them well. The leaves rotted from being frequently wetted in watering, and ultimately the plant from the same cause. They are liable to do so. You may prevent it to a considerable extent, by placing pieces of sandstone from the size of a hazel nut, up to that of a small walnut, upon the surface of the soil in which the plant is growing, and close to the collar, making them quite level with the rim of the pot, or slightly raising them above it.

ANTS IN GREENHOUSE (J. A. T.). You may drive them away by sprinkling guano over their haunts, or poison them with arsenic and honey, mixed in equal parts, and placed thinly in saucers. Care should be taken to keep the paste out of the reach of animals.

TREATMENT OF VINES IN POTS FOR FRUITING (Old Subscriber, Dublin).—You would see much in recent numbers, and in "Doings of the Last Week" as to the treatment necessary for fresh-potted trees when they are wanted to fruit the same season. In your case, and as you can give no artificial heat, we would advise you to let the Vines remain in the same 11-inch pots, and to set the pots, after enlarging the hole at the bottom, into larger pots, with rich compost at the bottom and between the pots, or if you did not mind moving the plants when in fruit, to set the pots in rich compost on the ground floor of the viney. You will thus gain all the advantage of rooting without the checks and risks that accompany it. Everything that fruits in pots does so best when the earth in the pot is full of roots. In the case of your Vines, make up your mind that if you obtain a good crop from them it will be the only crop they will bear. As these canes are strong and 6 feet long, we would not shorten them at all, but would fasten three or four sticks in the pot and twist the canes round them, which will cause the Vines to break more regularly. As there is no heat in the place, you can do little more than supply with rich waterings, give air as needed, thin the Grapes when set, and attend to air-giving, allowing them to have no sudden changes.

FRUITING YOUNG VINES (Idem).—We would not advise you to take any except a small bunch from Vines raised from eyes and planted out last autumn. If you were to plant out those you have now bought, we would advise the same caution to be exercised, or if you obtained more and planted them we would advise the same. You may fruit the strong Vines in 11-inch pots, and take what you can from them; but if they bear a crop we would not advise you to think of planting them out then for future service. You cannot take a crop from such a young cane, and yet make it of much service afterwards without a loss of time that would make a young Vine better in every way.

PLANTS FOR A WINDOW WITH A NORTHERN ASPECT (H. B. Leed).—Plants require much care to make them succeed in a northern aspect. Such bulbs as Snowdrops, Crocuses, and Scillas do well in winter and spring, and so do Chinese Primulas. All flowering plants will keep longer in bloom there, but it is not so easy to induce plants to come in bloom in a north window. We would recommend instead such sweet-scented plants as *Aloysia citrifolia*, and the sweet Oak-leaved Pelargonium, and variegated-leaved plants, as the variegated Cobaea, or the finer variegated Ivies, which are very beautiful.

TWELVE GREENHOUSE PLANTS TO FLOWER IN JUNE (A Constant Subscriber).—The following hard-wooded plants will bloom in June; their being in perfection on the 24th of that month will depend on the management:—*Boronia denticulata*, *B. serrulata*, *Crowea saligna*, *Pimelea Hendersonii* or *rosea*, *Illyria longifolia* or *Celsii*, *Polygala latifolia*, *Acanthia Drummondii*, *Daviesia latifolia*, *Cornus spiciosa* and others, *Bossia tenuifolia*, *Leschenaultia formosa*, and *Platylobium ovatum*.

SIX GREENHOUSE BULBS TO FLOWER IN JUNE (Idem).—For flowering in the end of June, not to speak of Gladioli, not properly bulbs, of the Colvilli and Blandias group, we may mention the following:—*Valloia purpurea*, *Bransvigia Josephine*, *Citium riparium*, *Serice versicolor*, *Pancratium canariense*, and *Cyrtanthus striatus*.

TWELVE GREENHOUSE FERNS (Idem).—*Adiantum capillus-Veneris*, *A. pedatum*, *Asplenium marinum*, *Blechnum hastatum*, *Cystopteris tenuis*, *Davallia canariensis*, *Gleichenia dicarpa*, *Hymenophyllum dilatatum*, *Lomaria Fraseri*, *Oncophyllum lucidum*, *Pteris serrulata*, and *Trichomanes radicans*. These are mostly small but beautiful.

ARNOTT'S STOVE (R. C.).—We do not quite understand your inquiry. An Arnott's stove of brick 2 feet 10 inches square, 3 feet 10 inches high, with a firebox of 10 inches square, and as much in depth, made with fire-bricks, would heat your house 45 feet by 12 sufficiently to keep out frost; but you speak of an Arnott's boiler. If the circumstances suited, you might have in the house a small Arnott's stove 2 feet 4 inches in height, and fed from the outside, and have fixed on the top one of Mr. Hughes's boilers 16 inches square, which is 4 inches deep at the sides, and 3 inches where concave in the middle, and with socket joints for 3-inch pipes. This or any small saddle boiler with a common furnace will heat your house; and to keep out frost you would need at least 40 feet of 3-inch pipes, and 50 more if you intended to force. By the Arnott's stove in the house, and the small flat boiler used by Mr. Rivers, you may heat the house without making stoveholes, &c. outside. The chief point is, that you must avoid above 18 inches in length of a horizontal smoke pipe.

PLANTING A FLOWER BED (C. B. M.).—You do not say what the size of your oval bed is, but the following will look well in double or single beds, beginning at the corner nearest to—*Crastium*, blue *Lolalia*, *Aurea* *tribunda*, *Calceolaria*, dwarf Scarlet *Polygonium*, such as Little David, *Cineraria maritima*, or *Centauria candidissima*, and the centre *Coleus*, *Amaranthus*, or *Perilla*. The *Coleus* will be best if it thrives in the place. A splendid bed at Woburn was filled with *Coleus* and edged with *Cineraria maritima*.

GRAFTING MANETTI ROSE STOCKS (Idem).—If we were to graft Manetti Stocks now, we would take them up out of the ground, cut the stems so low down that they would be under the soil in the pot, and graft before potting. The union would be sooner healed if the pot were set in a close place, or plunged in a very gentle hotbed. This will answer the third inquiry as to how much of the stock should be left above the pot, namely, as little as possible; and also the fourth inquiry, as to starting the stock in heat first, as what would be gained by doing so would be

lost by the greater trouble of grafting, so as to graft low enough after potting. If the plants had previously been in pots, then we would say, Prune back and excite the stocks gently before grafting. The shoots cut off will grow if inserted in the ground, made, say, 9 inches long and one bud left above the ground. The shoots of the Roses now in a cool greenhouse will do for grafting the Manetti stocks. See answers about Manetti Roses and stocks in page 142.

DESTROYING CRICKETS (*An Old Subscriber*).—Try phosphorus paste spread on slices of bread, laying these down in the house at night, and removing them in the morning; or mix 1oz. of arsenic, and a little ground aniseed and caraway seed, with half a pint of oatmeal. Lay the mixture on pieces of paper, but take care that no domestic animal shall touch it. It is a good plan to tempt the crickets with oatmeal and aromatics, without the arsenic, for a night or two, before using the poisoned mixture.

CATERPILLARS ON PELARGONIUMS (*W. B. M.*).—Your box arrived in a dilapidated state, and one of the three insects had escaped. The other two caterpillars are those of two distinct species of Noctuidæ, the large being that of a *Graphophora*. They should be looked for after dark with a light when they come out of their retreats underground, or among the leaves to feed.—*W.*

TREE ONION (*B. D. G.*).—We consider it quite worthless as compared with others of the same genus. You will be often deceived if you accept as a guide the work you name. No seed-man keeps the Tree Onion. It does not produce seed, but a bunch of very small bulbs on the top of a stem.

MATHEMATICS (*A Subscriber*).—Buy the Treatises in Chambers's "Educational Course." Loudon's "Self-instruction" contains some elementary information.

PEACH TREE PRUNING (*A Novice*).—The fruit is borne on the spurs. The leading shoot until it has attained its limit will not require stopping.

PREVENTING MOSS ON GARDEN WALLS (*Subscriber, E. P.*).—The best way to clear a wall of moss is to wash it with a strong brine made fully strong enough to support an egg on its end, but not to raise it. This should be applied to the wall with a brush, the trees being unnailed, drawn from the wall, and covered up if the buds have begun to swell, as is likely at this season. Whilst wet the wall should be dusted with fresh lime, making it quite white, and in two or three days it may have a coat of whitewash, subdued in colour by the addition of 1 lb. of flowers of sulphur to every gallon of whitewash, and 1 lb. of lamp black or soot to every ten gallons.

PROPAGATING THE ORIENTAL PLANE (*Idem*).—The best plants are those from seeds; but the plants are liable to be cut off by the frost, from the growths not being sufficiently ripened. They should be grown in a warm sheltered situation in dry ground, where the shoots will be better perfected, and able to withstand frost. Layers partake of the tree-like habit of the parent, and are more hardy than seedlings. Lime trees are increased by layers, and they make splendid trees, and so would the

Plane from layers, only our climate is in most localities too cold, and our summer too short for the full maturation of the wood. We would advise you to try grafting on the Sycamore.

AL FRESCO (*A. Trollope*).—We never state the real address of correspondents who adopt anonymous signatures. If you will send to us a letter undirected, with the six postage stamps requisite for the American postage, we will forward it. The same reply will apply to the query of "B. W. Royston," except that one postage stamp will suffice.

MOSS AND PLANTAIN ON CROQUET GROUND (*Melbourne*).—The best way to eradicate the plantain is to grub it up by the root, which may be done now when the ground is soft, or during showery weather. The production of moss is caused by the poorness of the soil, and the consequent poor growth of the grass. We would advise you to remove the plantains from now up to the close of March, and then to give a good dressing of very rotten manure or rich fine compost. After a heavy rain rake the surface well with an iron rake, and with a grass or daisy rake clear off the rough particles, if any, by the middle of April, and give a good rolling after sowing 4 lbs. Suckling Clover, 4 lbs. White Clover, 4 lbs. *Cynosurus cristatus*, 4 lbs. *Festuca duriuscula*, and 2 lbs. *Poa annularis*, in mixture, for one acre of ground. Any remaining roots of plantain may be destroyed by applying a drop of sulphuric acid from the end of a small stick to the heart or crown of each plant in dry weather.

POTTING PASSIFLORA BELLOTTI (*J. Bayley*).—Your plant having been so long in the same pot, we would not only repot it, but remove as much of the old soil as possible without destroying too many roots.

TORREYA PULCHERRIMA CULTURE (*Idem*).—You should have good well-rooted cuttings of this plant potted-off and established in pots before autumn. They should be kept on shelves near the glass and moderately dry during the winter. In spring they should be repeatedly shifted into larger pots as the pots become filled with roots, giving the last shift in June. The shoots may be stopped up to this time, and doing so will tend to make the plant bushy. With a light, airy situation, and a position near the glass, this plant flowers freely in autumn and winter. It requires the temperature of a stove, but will succeed in a vinery in summer.

COMBRETUM PURPUREUM PRUNING (*Idem*).—In pruning, the side shoots only should be cut back to within two or three good eyes of the main stem or shoot from which they take their rise.

MULCHING FRUIT TREES (*E. A. S.*).—The mulching put on in autumn should now, if of excessive thickness, be reduced by taking some of it away; but if it does not exceed 3 inches in thickness it may remain, and will gradually disappear. You are quite right; the less the ground is stirred close to the stems of fruit trees the better; but the spaces between, not being occupied with the roots of the trees, may be forked over with advantage. Never dig so as to interfere with fruit trees' roots.

NAMES OF PLANTS (*A. B.*).—*Polytrichum nodulatum*. (*R. D. Bolton*).—1, *Pteris serrulata*; 2, *Salicornia herbacea*. (*R. L.*).—*Crategus coccinea*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending February 18th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. . 12	30.4-1	30.356	47	27	43	41	N.	.00	Hazy, fine; cloudy and fine; densely overcast.
Thurs. 13	30.251	30.195	50	27	44	43	W.	.00	Overcast, clear and fine; overcast, fine.
Fri. . 14	30.150	30.025	48	43	44	41	S.W.	.00	Partially overcast, fine; overcast; densely overcast.
Sat. . 15	30.350	30.007	47	22	45	42	N.	.06	Overcast; densely overcast; clear starlight.
Sun. . 16	30.430	30.233	49	26	44	43	S.W.	.00	Clear and frosty; clear and fine; clear and cold.
Mon. . 17	30.302	30.193	51	27	42	41	S.W.	.00	Clear and fine; clear; clear and frosty.
Tues. . 18	30.147	23.870	49	42	43	41	S.W.	.00	Slight fog; overcast; cloudy and fine at night.
Mean	30.305	30.133	48.71	30.57	43.57	41.71	..	0.06	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

LIGHT AND DARK BRAHMAS.

IN reply to "Y. B. A. Z.'s" letter, commenting on my remarks on Light and Dark Brahmas, I hope that I am not unreasonable in asking for fairness to be exercised, as it is absurd that cups should be offered to both varieties, but invariably won by the Dark.

That Dark Brahmas are larger I do not deny, but I do deny that they are handsomer; in fact, I do not know a prettier sight than a yard of twenty or thirty Light Brahmas in good feather and condition.

"Y. B. A. Z." seems to think that I ask for too much when I suggest separate cups for both varieties; but if the entries of Light increase as they have done of late years, I think committees will be well able to afford them a cup to themselves. If, however, they cannot afford a cup to both, let them offer the cup to the Dark, and increase the prizes to the Light; this would be much more satisfactory.

While on these subjects, I should like to know your opinion on trimming fowls' legs, &c. Is it fair to do so, or is it not? I know several exhibitors who openly admit that they do so, and if you expostulate with them they simply say, "Everybody does the same." But this appears to me most unsatisfactory; it should be either fair to get them up in the best way possible, or judges should disqualify for the least appear-

ance of trimming, and exhibitors discovered tampering with their birds should be excluded by the Society from further exhibitions. For myself I do not care which way it is to be, but I do hope before another season Mr. Hewitt and other eminent Judges will give us their opinions.—ALBERT O. WORTHINGTON, *Newton Park, Burton-on-Trent.*

FOUR-TOED HOUDANS.

I AM glad to see Mr. Schröder advocating the extinction of the "wretched fifth toe" in Houdans, and as in a work written by me, and very favourably noticed in your columns, I have contended (the first, I believe, who has done so), for the same result, I would like to add a word on the subject.

I feel quite certain that the fifth toe is the ultimate cause of the bumble foot of the Dorking. This is said to be caused by the bird flying from a high perch on to hard ground, or, according to some, by the great weight of the fowl; but many Brahmas are yet heavier, and still never have bumble foot, while a have seen many Dorkings never suffered to roost more than I foot above soft grass turf, and which never set foot on anything harder, in which the disease in its worse type has been developed.

Now, we profess to import and breed the Houdans, not so much as fancy birds (for even their plumage has not yet become uniform), but for their utility and hardness. With the latter point the extinction of the fifth toe is ultimately associated, and I venture to predict that just as soon as that fea-

ture shall become indelibly stamped upon the breed, the great bane of the Dorking race will begin to appear with it. At this period it may easily be bred out, and I am glad one so identified with the breed has had the courage to contend for its being done; and I ask any of our exhibitors who may share the opinion, to give weight to it with theirs, and we may then, perhaps, ask Mr. Hewitt and other judges to publish in your columns their permission that, concerning this point, all shall compete on equal terms.

I would like to ask Mr. Schröder if he has yet known any cases of real typical "bumble foot" in the Houdan breed?—NEMO.

MR. SCHRÖDER wants to do away with the fifth toe in Houdan fowls; I think the proposed reform comes too late. Pure Houdans from the yards of good breeders in the Houdan district breed so small a per-centage of four-toed chickens that the fifth toe must be considered a settled feature in this race of fowls.

Our poultry judges in insisting upon the fifth toe, have only followed the French standard of judging Houdans, made long before we in England knew much about these fowls. I have examined hundreds of them in the Houdan district without finding a single four-toed bird. I have imported a large number of them, and never received a four-toed one. In my last year's breeding I had only four chickens with four toes, and I traced them all to one hen, bought from a yard in the vicinity of Beauvais, quite out of the Houdan district. I have found this strain very impure. There are many of them in my neighbourhood, and they are as noted for the absence of the crest and muffling as for having mostly four toes. I believe that pure-bred Houdans will produce very few four-toed chickens, and should expect to find more or less an absence of muffling and crest in many four-toed birds—at least, such is my experience up to the present time.—F. B. HEALD, *White-moor, near Nottingham*.

CAMBRIDGE POULTRY SHOW.

THIS Show was remarkably well arranged, more especially when it is borne in mind it was the first effort of the acting Committee, whose desire to fulfil every duty was very obvious. The weather fortunately proved very favorable, and the Show was most successful. Although many of the birds exhibited bore evidence of the necessity of rest after the long season of exhibition, now so rapidly drawing to a close, the generality of those shown were in good condition, and many were remarkably so.

The Grey *Dorking* classes were very good; the *Game* classes scarcely less so, but in the latter, with the exception of few besides the winning pens, they were not well shown, the bulk being not of sound hard feather. In *Brabams*, the prizes were open to either Light or Dark-feathered ones and a good competition ensued, though not a single pen of the Light-feathered birds was entered. A few good pens of *Hamburghs* were shown, but the majority were not high-class specimens, the *Hamburgh* being a variety of fowls but little kept in the districts around Cambridge. Some really splendid specimens of *Spanish* fowls were shown, and were greatly admired. In *Bantams*, all kinds competing in one open class brought together about forty pens. The Game Bantams were very good, some very small Red Piles being particularly worthy of mention. The *Seabrights* were very indifferently represented. Some few nicely feathered pens of Pheasants seemed general favorites.

In *Ducks*, the Aylesbury were by far the best breed shown. The collection of *Pigeons* was uniformly good, so much so that many additional prizes might have been justly awarded had the funds permitted it. Many of the newly imported breeds in the Variety class of Pigeons were well shown, and were very unusual varieties.

In *Rabbits*, a sooty fawn-colored doe took the premium for weight, being 164 lbs, when brought to scale, and of that colour she was a truly handsome specimen. The longest-eared Rabbit measured 21 inches.

DORKINGS (Any variety).—First, Rev. C. Crosse, Cambridge. Second, J. Edgar, Osmanthorpe Hall, Newark. **CHICKENS**.—First, Mrs. Seamons, Aylesbury. Second, Rev. C. Crosse. Highly Commended, J. Haward, Great Blakenham; F. Parlett, Great Baddow; G. S. Hall, Ely.

GAME (Any variety).—First, W. B. Jeffries, Ipswich. Second, S. Matthews, Stowmarket. Highly Commended, J. Jekin, Eltham, Kent; H. Martin, Sculthorpe, Eckenham; W. Boyes, Beverley; S. Matthews; R. Hall. Commended, W. Dale, Weston-super-Mare; R. B. Stafford, Bedford. **CHICKENS**.—First and Second, S. Matthews. Highly Commended, J. Jekin. Commended, Rev. F. Watson, Messing, Kelvedon; W. Freeman, Cambridge; R. Hall.

Best Game Cock in Town or County of Cambridge.—Prize, R. Hall. **COCHIN-CHINA** (Any colour).—First, Mrs. J. Clarke, Bedford. Second, B. S. Lowndes. Highly Commended, B. S. Lowndes; W. Turner, jun., Ipswich; E. Shearman, Chelmsford; Mrs. Clarke; W. H. Tomlinson, Newark. Commended, F. G. Phillips, St. Leonards-on-Sea.

BRAMA POOTRA (Any colour).—First, Mrs. Seamons. Second, J. Dring, Gudeby Marsh, Long Sutton. Highly Commended, W. O. Quibell, Newark. Commended, Col. Stuart Wortley, London; Rev. E. G. Dawson, Otton, Belchamp, Sudbury; G. A. Shippey, Cambridge.

HAMBURGHS (Gold and Silver-pencilled).—First, H. Pickles, jun., Earby. Second, T. Coulson, Milton. Commended, C. Bayers; J. Clarke; W. H. Tomlinson.

HAMBURGHS (Gold and Silver-spangled).—First, Rev. F. Tearle, Gazeley, Newmarket. Second, H. Pickles, jun. Highly Commended, J. F. Leversidge, Newark. Commended, E. Hills, Ely.

SPANISH (Any colour).—First and Second, F. James. Highly Commended, H. Lingwood; W. B. Jeffries.

BANTAMS (Any variety).—First, W. B. Jeffries. Second, J. Parlett, Huntingdon. Highly Commended, Rev. F. Tearle; W. Dale, Weston-super-Mare; Mrs. J. Clarke; E. Toller, Little Carlton, Notts; W. H. Tomlinson. Commended, W. Eady, Milton; W. Mansfield, Cambridge; E. J. Drew, Weston-super-Mare; S. Rowley, Histon, Cambs; W. Moysie, King's Lynn, Norfolk.

ANY OTHER VARIETY.—First, A. S. Rae, Ely (Silver-spangled Polish). Second, Col. Stuart Wortley (Creve Coeur). Highly Commended, T. H. Windham, Salisbury (Creve Coeur); G. W. Boothby, Louth (Silver Poldans); J. Edgar (Houdans); W. O. Quibell (Houdans). Commended, W. Mansfield, Cambridge (Padua Chamois); J. Edgar (Creve Coeur); Mrs. J. Clark (White Minorca and Peravian); S. Stanley (Dorking Bantams).

PHEASANTS (Any variety).—First, Mrs. Sampter, Histon Hall (Silver). Second, H. Deuch, Ely (Tame). Commended, W. Freeman, Cambridge (Common).

DUCKS (Aylesbury).—First, Mrs. Seamons. Second, Rev. C. Crosse. Highly Commended, Mrs. J. Clarke; Rev. C. Crosse. Commended, Rev. W. J. Tibbrook.

DUCKS (Rouen).—First, H. Dowsett, Pleshey. Second, H. Frost, West Wrating Hall. Commended, J. F. Fetch, Cambridge.

PIGEONS.

TUMBLERS.—First, P. H. Jones, Fulham. Second, L. Wren, Lowestoft. Highly Commended, H. Yardley, Birmingham; J. Bradd, Cambridge.

POWTERS.—First, P. H. Jones. Second, H. Yardley. Highly Commended, P. H. Jones; F. Sale, Derby.

CARRIERS.—First, J. W. Addison, Cambridge. Second, L. Wren. Highly Commended, H. Yardley.

BARBS.—First, P. H. Jones. Second, J. W. Addison. Highly Commended, P. H. Jones; J. W. Addison; H. Yardley; J. Percival.

FANTAILS.—First and Second, H. Yardley. Highly Commended, G. S. Hall, Ely. Commended, J. Percival.

RUNTS.—First, T. D. Green, Saffron Walden. Second, H. Yardley. Highly Commended, T. D. Green; H. Yardley.

JACOBS.—First, P. H. Jones. Second, F. Sale. Highly Commended, H. Yardley.

ANY OTHER DISTINCT VARIETY.—First and Second, H. Yardley (Fairies, Ice Pigeons). Highly Commended, P. H. Jones (Dragons and Foreign Owls); J. W. Addison (Turbits); H. M. Hale, Croydon (Baldheads); F. Sale (Dragons). Commended, L. Wren (Trumpeters); J. Percival (Brussels).

RABBITS.—Length of Ear.—First, M. Millington, York, 21 inches. Second, J. Mellor, Cambridge, 19½ inches. Weight.—First, M. Millington, 16½ lbs. Second, W. Ellerby, 11½ lbs. *Any Breed*.—First, M. Millington (Fawn). Second, R. Wise, St. Ives (Silver Grey). Highly Commended, J. Allen; C. & R. Freeman (Himalayan); J. Mellor, Cambridge (Angola); G. Comins, Ely (Silver Grey).

CANARIES.

BELGIANS (Any variety except Pied).—First, R. D. Lenton, Cambridge. Second, G. J. Barnesby. Commended, E. Tyler, Cambridge; G. J. Barnesby.

BELGIAN (Pied).—Prize, G. J. Barnesby.

CINNAMON.—First, E. Tyler, Cambridge. Highly Commended, G. J. Barnesby.

NORWICH.—First, G. J. Barnesby. Second, W. B. Jeffries, Ipswich. Highly Commended, G. J. Barnesby. Commended, E. Tyler.

NORWICH (Pied).—First, G. J. Barnesby. Second, W. B. Jeffries. Highly Commended, E. Tyler.

YORKSHIRE.—First, G. J. Barnesby. Highly Commended and Commended, J. Mellor.

GOLDFINCH MULE.—First, G. J. Barnesby. Second, W. B. Jeffries. Highly Commended, G. J. Barnesby. Commended, E. Tyler.

CADE OF SIX CANARIES (Any variety).—First, Hon. Mrs. Neville, Cambridge. Second, G. J. Barnesby. Commended, E. Tyler.

BRITISH BIRDS.

GOLDFINCH.—First, E. Tyler. Second, R. Hall. Highly Commended, J. Mellor. Commended, W. Freeman, Cambridge; R. D. Lenton, Cambridge.

BULLFINCH.—First, R. Hall. Second, J. Mellor, Cambridge. Highly Commended, J. Baker, Cambridge; G. Bond.

NIGHTINGALE.—Prize, J. Mellor.

TURUSH.—Prize, J. B. Hopwood, Trinity College. Commended, H. Spinks.

BLACKBIRDS.—Prize, J. Mellor. Commended, J. B. Hopwood.

PARROT.—Prize, Rev. F. Tearle (King). Highly Commended, R. Callaby (Green).

Edward Hewitt, Esq., of Eden Cottage, Sparkbrook, near Birmingham, awarded the whole of the premiums for *Poultry*, *Pigeons*, and *Rabbits*; Mr. C. Pashler those for *Cage Birds*.

HALIFAX POULTRY SHOW.

THIS Show was held in the Odd Fellows' Hall, Halifax, on the 8th and 9th inst., and was well attended both by exhibitors and visitors. *Game*, *Game Bantams*, and *Brabams* were very good, and the *Hamburghs* were excellent. The Judge was R. Teebay, Esq., Fullwood, Preston.

SINGLE GAME COCK (Any variety).—First, J. Brough, Carlisle. Second, J. Wilson, Ovenden. Third, A. K. Briggs, Houshton Place, Bradford. Highly Commended, C. Chaloner, Chesterfield; E. Brough, Ball Hay Park, Leek; E. Akroyd, Bradford. Commended, J. T. Penland, Goos-bill, Bowling; F. J. Astbury, Prestwich; J. Mason, Kenwick Hill, Worcester.

SINGLE GAME HEN (Any variety).—First, J. Farrow, jun., Bardley Field, Kendal. Second, T. Suddick, Bradford. Third, E. Brough. Highly

Commended, J. Pickles, Mytholmroyd; E. Holland, Ovenden; E. Akroyd, Commended, J. Spencer, Queensbury.

GAME (Black-breasted and other Fals).—First and Cup for best pen of Game, E. Akroyd. Second, J. Fletcher, Stoneclough. Third, W. Boyes, Beverley. Highly Commended, J. Fletcher; J. Spencer. Commended, C. Chaloner; R. Hemmingsway, Shelf.

GAME (Any other variety).—First, J. Fletcher. Second, A. K. Briggs. Third, W. Boyes. Highly Commended, J. Brough. Commended, W. Dale, Weston-super-Mare; J. Thompson, Southworn.

SPANISH (Black).—First and Cup, J. Marchant, Halifax. Second, Hon. Miss Douglas Pennant, Penrhyn Castle, Bangor. Third, Messrs. W. and T. Pickard, Thorne, Leeds. Highly Commended, L. Blumiers, Horton, Bradford; J. Thresh, Bradford; J. Marchant. Commended, J. Thompson, Bingley.

COCHIN-CHINA.—First, T. Stretch, Ormskirk. Second, Hon. Miss Douglas Pennant. Third, H. Crossley, Broomfield, Halifax. Commended, Hon. Miss Douglas Pennant.

BRACHIA PECTORA.—First and Third, Hon. Miss Douglas Pennant. Second, J. Walker, Haya Park, Knaresborough. Highly Commended, W. H. King, Rochdale.

HAMBURGERS (Golden-spangled).—First, S. & R. Ashton, Mottram. Second, H. Pickles, jun., Darby, Skipton. Third, J. Pearson, Bradford. Highly Commended, W. A. Hyde, Hurst, Ashton-under-Lyme.

HAMBURGERS (Silver-spangled).—First, H. Robinson, Biddon, Leeds. Second and Highly Commended, J. Walker. Third, H. Pickles, jun. Commended, W. H. Sutcliffe, Wadsworth.

HAMBURGERS (Golden-pencilled).—First, J. Preston, Allerton, Bradford. Second and Third, H. Pickles, jun. Commended, J. Hollings, Bradford.

HAMBURGERS (Silver-pencilled).—First and Third, J. Walker. Second, J. Preston. Highly Commended, H. Pickles, jun.

GAME BANTAMS.—First, J. Hamber, Accrington. Second, E. A. Toder, Little Carlton, Newark. Third, J. Rhodes, Wakefield. Highly Commended, E. Blamires; G. Noble, Dewsbury; R. B. Riley, Ovenden. Commended, J. Rhodes, Southworn.

BANTAMS (Any other variety).—First, Messrs. Tonkin & Tuckey, Bristol. (Black). Second, T. Burgess, Brighton. Third, Rev. P. W. Storey, Daventry. (White Feather-legged). Highly Commended, J. Walker. (Scribble). R. B. Riley. Commended, Messrs. S. & R. Ashton (Black).

ANY OTHER VARIETY.—First, J. White, Northallerton (Grey Dorkings). Second, T. Burgess. Third, A. Tidwell, Ovenden (Blue Andalusians).

RABBITS.

SPANISH.—Medal, First, and Second, M. Millington, York (Fawn and Black and White Does). Highly Commended, A. H. Easton, Hull (Fawn and White Buck; M. Millington (Tortoiseshell Buck); W. Allison, Sheffield (Fawn Buck).

HIMALAYAN.—First, C. E. Marchant, Halifax. Second, F. L. Jones, Eatham, York.

ANGORA.—First, J. Alderson, Claremount, Halifax. Second, C. Rayson, Frestwich.

CRYSTAL PALACE BIRD SHOW.

We have much pleasure in again recording the annual exhibition of Canaries and British and foreign birds at the Crystal Palace, which opened on Saturday last, and will continue until Friday. The Show is being held in the new tropical portion of the Palace; but we question whether it would not have been advisable to have had it in the room in which it took place last year, as we fear that many of the little pets will return to their owner, somewhat the worse for their temporary change of residence.

The show of *Canaries* is quite up to the standard of previous shows, the most choice amongst which are the London Fancy and the Norwich and Jomque London Fancy, as well as the Lizards. The Goldfinch and Linnets Mules are most exquisitely beautiful and fine.

Among the *British* birds there are some most beautiful representatives of the Bullfinch and Goldfinch, and also of our Song Thrush; and in the Variety class are noticeable some extraordinary and most novel examples of the freaks of Nature, consisting of a most delicately coloured Bullfinch, a Goldfinch perfectly white, with the exception of a tinge of yellow on the wings and pink marking over the beak, and a cream-coloured Lark, and a white Sparrow.

The *Foreign* birds are not so well represented this year. There are some very beautiful Parrots, Cockatoos, and Paroquets. There is also a pair of Java Sparrows pure white, belonging to Mr. Hawkins, which attracted much attention. We likewise observed two most exquisite specimens of the Leadbeater Cockatoo, which deservedly obtained a special prize. The King Parrots and Paroquets are objects of great attraction, as also a covey of Partridges, exhibited by Mr. Stevens, of Netley Abbey, which was awarded a special prize.

The following is the list of awards:—

CANARIES.

NORWICH (Clear Yellow).—First and Third, Collinson & Hayden, Norwich. Second, W. Walter, Hyde Street, Winchester. Very Highly Commended, J. Bexson, Derby; J. Judd, Newington Butts; Collinson and Hayden; W. Walter. Highly Commended, Collinson & Hayden; R. Mackley, Norwich. Commended, J. Judd; Collinson & Hayden; W. Barwell, Southampton; G. Barrett, Peckham; R. Mackley; E. Coke, Derby.

NORWICH (Clear Buff).—First, E. Bennie, Rotten Row, Derby. Second, J. Bexson. Third, Collinson & Hayden. Very Highly Commended, W. Walter; J. Judd; Collinson & Hayden. Highly Commended, W. Walter; Collinson & Hayden; W. Barwell. Commended, R. Mackley; E. Coke; W. J. Toon, Kettering; J. Bexson; Collinson & Hayden; G. Tuckwood, Nottingham.

NORWICH (Evenly Marked or Variegated Yellow).—First and Second, Collinson & Hayden. Third, J. Judd. Very Highly Commended, W. Walter; J. Bexson; Collinson & Hayden; G. Tuckwood. Highly Commended, G. Moore, Northampton; Collinson & Hayden. Commended, G. Tuckwood.

NORWICH (Evenly Marked or Variegated Buff).—First and Second, J. Bexson. Third, W. Walter. Very Highly Commended, S. Tomes, North-

ampton; Collinson & Hayden. Highly Commended, J. Judd; Collinson and Hayden. Commended, W. Walter; R. Hayman, Middlesbrough-Tees.

NORWICH (Ticked or Unevenly Marked Yellow).—First, J. Bexson. Second, W. Walter. Very Highly Commended, J. Judd; Collinson and Hayden; H. Warrick, Norwich; W. Walter. Highly Commended, J. Bexson; Collinson & Hayden; W. Walter. Commended, Collinson and Hayden; W. Barwell; R. Mackley.

NORWICH (Ticked or Unevenly Marked Buff).—First, H. Warren. Second, Collinson & Hayden. Very Highly Commended, W. Walter; W. A. Blakston, Sunderland. Highly Commended, W. Walter; J. Bexson; Collinson & Hayden. Commended, J. Judd; Collinson & Hayden.

NORWICH (Variegated Crested Yellow).—First, G. E. Fryer, Clapham. Second and Third, Collinson & Hayden. Very Highly Commended, Collinson & Hayden. Highly Commended, G. Moore; Collinson & Hayden.

NORWICH (Variegated Crested Buff).—First, Collinson & Hayden. Second, G. Moore. Very Highly Commended, W. A. Blakston; Collinson and Hayden. Highly Commended, G. Moore; Collinson & Hayden. Commended, W. Walter; Collinson & Hayden; J. Judd.

BELGIAN (Clear Yellow).—First, S. Bunting, Derby. Second, H. Ashton, Frestwich. Very Highly Commended, E. Hawkins, Bear Street, Leicester Square; J. Bexson; W. Bulmer, jun., Stockton-on-Tees. Highly Commended, E. Hawkins; W. Bulmer, jun. Commended, E. Hawkins.

BELGIAN (Clear Buff).—First, S. Bunting. Second, H. Ashton. Very Highly Commended, E. Hawkins; W. Bulmer, jun. Highly Commended, J. Doel, Stockhouse; W. Bulmer, jun. Commended, J. Baxter, Newcastle-on-Tyne.

BELGIAN (Variegated or Ticked Yellow).—First, W. Bulmer, jun. Second, J. Hansen, Landport. Very Highly Commended, W. Bulmer, jun. Highly Commended, E. Hawkins.

BELGIAN (Variegated or Ticked Buff).—First, J. Baxter. Second, E. Hawkins. Very Highly Commended, H. Vine, East Coes; W. Bulmer, jun. Highly Commended, H. Vine; R. J. Troake, Bristol. Commended, J. Doel.

BELGIAN (Crested or any other Variety).—First, H. Ashton. Second, W. Walter. Commended, W. Walter.

JOQUE LONDON FANCY.—First, T. Mann, Cumberwell New Road. Second, J. Waller, Tchernacle Walk, Finsbury. Very Highly Commended, J. Waller. Highly Commended, J. Waller; W. Bradrick, Chisleigh. Commended, J. Waller; A. Ashton.

MELEY LONDON FANCY.—First, T. Mann. Second, J. Waller. Very Highly Commended, J. Waller. Highly Commended, J. Waller; H. Ashton.

LIZARD (Golden-spangled).—First, H. Ashton. Second and Third, G. Tuckwood. Very Highly Commended, J. Lumley, Derby; T. Fairbrass, Canterbury. Highly Commended, F. W. Fairbrass, Canterbury. Commended, F. W. Fairbrass; E. Hawkins.

LIZARD (Silver-spangled).—First, E. Bennie. Second, G. Tuckwood. Third, E. Hawkins. Very Highly Commended, J. Waller; F. W. Fairbrass; T. Smith, Coventry. Highly Commended, H. Vine; Collinson and Hayden. Commended, E. Hawkins.

JOQUE CANNON.—First and Second, H. Vine. Very Highly Commended, J. Wyke, Northampton; J. Waller; W. Walter, Finsbury; G. Moore. Highly Commended, J. St. John, Sunderland; G. Goulter, Northampton. Commended, G. Goulter; H. Ashton.

BUFF CANNON.—First, H. Ashton. Second, W. Walter. Very Highly Commended, G. Moore; G. Goulter. Highly Commended, G. Moore; S. Tomes. Commended, R. A. Simpson, Brixton.

ANY OTHER VARIETY.—First, S. Tomes. Second, G. Moore. Extra, W. Heap, Bradford. Very Highly Commended, H. Vine; H. Ashton; E. Hawkins. Highly Commended, J. Wynn; G. Moore; J. Baxter. Commended, W. Walter.

MULE (Yellow Goldfinch).—First, H. Ashton. Second, J. T. Tully, Monkwearmouth.

MULE (Buff Goldfinch).—First, J. T. Tully. Second, H. Ashton. Commended, J. T. Tully; H. Ashton.

MULE (Variegated Yellow Goldfinch).—First and Third, J. Doel. Second, J. T. Tully. Extra Second, H. Ashton. Very Highly Commended, F. E. Colman, Clapham; H. Ashton. Highly Commended, H. Peake, Dover; J. Doel.

MULE (Variegated Buff Goldfinch).—First and Second, J. Doel. Third, J. T. Tully. Very Highly Commended, T. Carrington, Derby; R. Hayman; H. Ashton. Highly Commended, G. Moore; J. T. Tully; G. Shiel, Sunderland; H. Ashton. Commended, W. Walter; G. Moore.

MULE (Dark Goldfinch).—First, W. Walter. Second, H. Vine. Very Highly Commended, H. Vine; S. Tomes; J. Baxter. Highly Commended, J. T. Tully. Commended, W. Walter; P. Flexney, Market Street, Caledonian Road.

MULE (Linnets).—First and Second, H. Ashton. Very Highly Commended, J. T. Tully.

MULE (Any other Variety).—First, W. Walter. Second, S. Tomes. Extra Second, E. Hawkins. Very Highly Commended, E. Winspear, Northampton; S. Tomes. Highly Commended, J. T. Tully; H. Ashton.

NORWICH (Six in one cage).—First and Second, W. Walter. Third, J. Judd. Very Highly Commended, W. Walter. Highly Commended, J. Judd.

BELGIAN (Six in one cage).—First and Third, E. Hawkins. Second, J. Jones, Manchester. Very Highly Commended, R. J. Troake. Highly Commended, J. Doel; W. Walter.

LIZARDS (Six Golden-spangled in one cage).—First, J. Judd. Second and Third, E. Hawkins.

LIZARDS (Six Silver-spangled in one cage).—First and Second, E. Hawkins.

MULES (Six Goldfinch in one cage).—First, H. Ashton. Second, J. T. Tully. Third, J. Doel. Very Highly Commended, W. Walter; J. T. Tully. Highly Commended, W. Heap.

MISCELLANEOUS.—First and Second, H. Ashton. Very Highly Commended, W. Walter; F. E. Colman; H. Ashton. Highly Commended, J. T. Tully.

BRITISH BIRDS.

BULLFINCH.—First, H. Vine. Second, J. Judd. Very Highly Commended, J. Wynn. Highly Commended, Mrs. T. Rose, Lougham Place, Northampton; D. Simmonds, Winchester; S. Hinds; E. Hawkins.

GOLDFINCH.—First, H. Vine. Extra, W. L. Chapman, Northampton. Third, Rev. H. C. Russell, Doncaster. Very Highly Commended, G. Moore. Highly Commended, J. Judd; J. Doel. Commended, W. Walter; J. Partridge, Peckham; A. Rettich, Brixton.

LINNET.—First, Highly Commended, and Commended, S. Hinds.
SKYLARK.—First and Very Highly Commended, J. Judd. Commended, S. Hinds.

WOODLARK.—First, J. Judd. Commended, C. Obermüller.
ROBIN.—Prize, J. Smith, Lower Norwood.
BLACKBIRD.—Prize, A. Isaacs, Prince's Street, Leicester Square. Highly Commended, W. Barnard, Anerley. Commended, L. Corti, Bath Street, City Road.

SONO THRUSH.—First, R. J. Baldwin, Northampton. Second, F. P. Cuddon, Croydon. Very Highly Commended, R. A. Simpson. Commended, W. Barnard.

STARLING.—Prize, J. Judd. Highly Commended, J. Judd; E. Hawkins; G. Munroe, Upper Norwood. Commended, W. Eicknell, Ebury Street, Belgravia.

MAGPIE.—Prize, A. Von Glehn, Sydenham.

ANY OTHER VARIETY.—First, J. Adams, Eastbourne, Sussex (White Goldfinch). Second and Third, E. Hawkins. Fourth, T. Carrington. Fifth, J. H. Oxley. Highly Commended, E. Hawkins (White Sparrow); Rev. H. C. Russell (White Pied Linnet).

BIRDS OF PASSAGE AND MIGRATORY BIRDS.

BLACKCAP.—Prize, C. Obermüller. Very Highly Commended, S. Hinds. Highly Commended, C. A. Bowdler.

NIGHTINGALE.—Prize, G. Miller, New North Road, Hoxton.

SISKIN OR ABERDEVINE.—Prize, W. Walter. Very Highly Commended, J. Judd. Highly Commended, H. Ashton; E. De Le Simmonds, Winchester. Commended, E. Wimpsey.

ANY OTHER VARIETY.—Prize, E. Hawkins (Waxed Chatterer). Very Highly Commended, E. Hawkins. Commended, W. Walter (Waxwing).

FOREIGN BIRDS.

COCKATOO (Lemon or Orange-crested).—First, M. George, Upper East Smithfield. Second, K. H. Douglas, Dalston. Very Highly Commended, J. Partridge.

COCKATOO (Leadbeater, or Rose-crested).—First and Second, A. Isaacs. Special, F. Ashley.

COCKATOO (Any other variety).—Prize, J. Judd. Highly Commended, A. Isaacs.

GREY PARROTS.—First, C. Thompson, Upper Norwood. Second, J. Judd.

LOVE BIRDS.—Prize, J. Judd. Highly Commended, E. Hawkins.

PARAKEETS (Australian Grass).—Prize, H. Vine. Very Highly Commended, J. Judd; E. Hawkins. Highly Commended, J. Judd; W. Walter; A. Isaacs.

PARAKEETS (Ring-necked or Bengal).—Prize, G. Hurs.

PARAKEETS (Rosehill).—Prize, J. Judd.

PARAKEETS (Pendants).—Prize, W. Walter. Commended, J. Jones.

PARAKEETS (Any other variety).—Prize, J. Judd.

KING PARROTS.—Prize, A. Isaacs. Very Highly Commended, J. Jones; J. Judd.

COCKATEALS.—Prize, Mrs. G. Rockitt. Very Highly Commended, J. Judd. Commended, A. Isaacs.

LORY (Any variety).—Prize, J. Judd.

SPARROWS (Diamond).—Prize, A. Isaacs. Highly Commended, W. Walter. Commended, S. Hinds.

SPARROWS (Coral-necked).—Prize, J. Judd. Very Highly Commended, A. Isaacs. Highly Commended, E. Hawkins.

SPARROWS (Java).—Prize, E. Hawkins. Very Highly Commended, W. Walter. Highly Commended, E. Hawkins.

INDIGO BLUE BIRDS.—Prize, E. Hawkins.

WAXBILLS (Any variety).—First, A. Isaacs. Second, W. Walter. Very Highly Commended, J. Judd. Highly Commended, E. Hawkins; A. Isaacs.

CARDINALS.—Prize, E. Hawkins. Very Highly Commended, E. Hawkins. **WIDAR BIRDS.**—Prize, W. Walter.

ANY OTHER VARIETY.—First and Third, E. Hawkins (White Java Sparrow). Second, H. Ashton (Scarlet Tanager). Very Highly Commended, W. Walter (Grenadier Bishop). Highly Commended, W. Walter (White-headed Manakin); S. Bunting (Saffron Finch); W. T. Jones (Senegal Canary); A. Isaacs (Black Manakins). Commended, E. Hawkins (Glossy Oriole).

GROUP OF PARTRIDGES (Cross between English and French).—Special Prize, J. S. Stevens.

JUDGES.—*Comities.*—Mr. T. Moore; Mr. A. Wilmore; Mr. G. J. Barnesby. *British and Foreign Birds.*—Mr. W. Goodwin.

PIGEONS—MATING WITH MEALY, &c.

I NOTICE with pleasure Mr. Heath's remarks in the Journal of the 23rd ult. on my notes on the book entitled "Pigeons," and I have no doubt that by means of such communications we shall by-and-by reach a real "standard of excellence."

In my experience in breeding and observing the breeds of Pouters, the greater number of Yellow birds bred from a Mealy on either the one side or the other have shown strongly defined bars. By this I do not mean to say that the bars are necessarily dark or solid in colour, but "strongly defined," or plainly marked. When this has not been the case many of the birds have been pale in colour, some of a dappled or clouded yellow, others having the edges of each or most of the feathers marked with a lighter shade, and, as a rule, showing indications of the bar. Thus it is that Mr. Heath's "three Red cocks, with scarcely any sign of a bar," do show it, I am led to presume, in a degree—perhaps in a very small degree, but the indications are there. A good judge, looking along the line of Yellow Pouters in one of our exhibitions, will seldom fail in pointing out birds bred from Mealties.

I trust it will be understood that I do not condemn the birds bred in this way; they are to my eye all beautiful, and many of them, without doubt, very handsome in form, and when the

bars are strong in colour they add a very pretty variety to the Yellow class. It is the rule for breeding Yellow Pied Pouters that I condemn, and more particularly when recommended as possessing an "advantage."

This is one of the points I was desirous of pressing upon the attention of my brethren in the fancy; for now that we have attained to size and length of feather, we must give to colour more attention. When a book of such pretensions as "Pigeons" is put into our hands, we naturally expect to find at least plain directions founded on past experience, and if perused by a fancier of little or no experience, he as naturally looks upon it as an unerring guide. Fortunately or unfortunately, I must not say which, I have been born a Pigeon-fancier, and I did feel annoyed at finding a book on our pastime so well "got up," setting forth rules of this kind.

As the question of matching colours is now raised, allow me to ask, Why breed for Yellows from Mealy at all? We want a rich solid yellow colour, without bars on the wing. This being the case, it seems folly to introduce the bar or any other objectionable mark. We can introduce such marks by one cross, the bars more particularly; but how many crosses will it require to breed those marks thoroughly out? The bar will appear every now and then for generations. A pure-bred solid Red is the colour of bird to match with a Yellow, and from Mr. Heath's remarks I feel sure he will agree with me in this. I have only seen one or two specimens of Mealties without bars, I think only one; they are very rare, and the reason is that the Mealy comes from the Blue Pied; it may have been a distant cross, but Blue is the origin. Hence a Mealy is the best colour to match with a Blue (if a cross of colour is required), as it tends to give that softness to the blue colour so much prized, and certainly most beautiful. To a fancier of Blues a Mealy bird is valuable, it being generally of very fine shape.

The Mealties Mr. Heath refers to as "without any bars at all," are, I suspect, what are properly called Sandies. They are of a reddish sandy colour, not of that soft solid tint of the Mealy proper. The feathers are streaked with a dull reddish sandy or blackish red sandy colour; if so, the proper name is Sandy. Birds of this colour are of mixed blood, principally Black, and a most valuable bird to breed with Black Pied; as a rule, they are handsome in form, and often very fine in limb.

The prescription Mr. Heath kindly gives for roup I shall try the first time my birds are affected with that dire disease, and report the result. The diseases of Pigeons might form of themselves a study; the causes seem almost unknown, and the cures very uncertain. I have had upwards of twenty young Pouters carried off in one season from roup and purging, perhaps the following year only one or two; some years the old birds only are affected, and in other seasons the whole collection seems to enjoy perfect health.

In reading over the pages of THE JOURNAL OF HORTICULTURE, teeming with interest to every admirer of Nature—a publication I find almost everywhere—I meet with articles on horticulture in every department, on singing birds, fowls, bees, and silkworms, and even on the insects and dust that prey on or disturb each or all of them. But what of the Pigeon fancy? So far it is undeveloped in the field of letters, for few come forward to give us their experience. A pastime full of interest, requiring as much art and care as any other, year by year gaining on the attention of the public, and yet it is left in the background. We must bestir ourselves.—J. HURD.

BREEDING YELLOW POUTER PIGEONS.

HAVING read with pleasure the letters upon matching Pouters for obtaining Yellow ones, I wish also to state the results of my long experience and success in breeding that rare colour, of which I have bred some of the best birds both for richness of colour and style.

To use the words of my friend, Mr. Huie, in breeding for Yellows we want a rich, solid, orange colour, not a light or pale colour, or streaked at the edge of the feather with white or a buff tinge. Mr. Huie says, that five minutes' consideration will bring us to the conclusion, that no bird showing a bar should be introduced to breed the desired orange colour, and I fully endorse that opinion.

For obtaining Yellows, nearly in every nest of young birds the first need is to have a rich-coloured Red cock bird, and as nearly of a blood colour as possible. Mate him with a Yellow hen as rich in colour as possible.

Next mate a Yellow cock bird, of course as near as possible to the desired orange colour, with a blood-red hen.

From the produce of these two pairs of birds, pick out for stock next year some of the best young birds of the rich blood-red colour.

Now, to the practical part of obtaining that orange colour. Pick out a cock and hen both of the rich Red and mate them, of course taking care that they are not brother and sister, but from the different pairs of birds. This will insure your obtaining Yellows of the desired orange hue, and not only so, but nearly all the young birds will be Yellow.

Never put two Yellows together, for if you do you will lose the desired colour.

I will on another occasion treat upon matching the other colours of Pouters, also upon style and leg.—H. SIMPSON, *Beckingham, Newark, Notts.*

ROUP AND CANKER IN PIGEONS.

PIGEON-FANCIERS will, no doubt, feel grateful to you for the kind facilities you offer to them in the last number but one of your valuable Journal.

I have read Mr. Huie's review of Mr. Tegetmeier's work on Pigeons with much satisfaction. I trust the book before us does not presume to be offered as an authority on the rearing, &c., of these beautiful birds. A work entitled on its own merits to rank as a standard work upon Pigeons is much wanted, and would be hailed with delight by the fancy; but something other than a compilation of extracts and quotations from former authors is wanted.

I am a little surprised that none of the great Scotch or Irish Pouter-fanciers has come forward in support of Mr. Huie in this controversy, "Matching for Colour, &c." Mr. Volkman has in your number of the 6th inst., given to the fancy a valuable article in favour of Mr. Huie; the suggestions therein contained fully meet the case, and if fanciers would only endeavour to follow out his ideas, we should, ere long, see a marked improvement in Pouters of all colours.

I am of Mr. Huie's opinion, that canker and roup are not infections. I speak from an experience of four years, during which time I have had only one case of the former disease which proved fatal to a young bird. Of the latter disease I have had many cases, more especially among young birds, and the majority of the attacks proved fatal. Last week I destroyed a cock Stomacher on account of his having become very much reduced from the effects of this disease. His hen is in perfect health, and so are their offspring, now one month old.

Two years ago roup proved most disastrous to my young birds, and after careful observation I came to the conclusion that the state of the weather, which was very damp, and a want of proper attention in feeding, accounted in a great measure for the spread of the disease. Last season I lost very few birds from roup, and none from 'canker,' and I feel convinced if birds are kept free from damp, and are otherwise properly cared for, that fanciers would have less frequently to lament the loss of promising birds. Perhaps Mr. Rose will kindly communicate to the fancy his recipe for the cure of roup.—A. B. BOYD, *Richmond Lodge, Trinity, Edinburgh.*

UNITING CONDEMNED BEES.

1860 was the worst honey year in my recollection. After bringing my bees from the moors, my study was not how to obtain honey from my hives, but how to put honey into them, and how to carry the greatest number of stocks through the winter at the least cost.

Having twelve hives in all, I selected six, which I considered would make the best keepers, then took the bees out of the six weaker hives, and put them into four of the keepers, leaving two undisturbed. I then gave all the honey taken from the condemned colonies to the keepers, with the view of securing more stocks in the following spring and at much less cost than by feeding them all separately. I was rewarded in spring by possessing three excellent stocks, which survived, although three died, whilst my neighbours for miles round lost nearly all. I have followed the same system ever since—that is, I take the bees out of my condemned hives and strengthen my weakest keepers with them. I do not think it any advantage to add bees to a strong hive.

I consider it unpractical to drive bees into an empty skep after the honey season is over in this district, the chance of their surviving the winter being too small to counterbalance the certain heavy cost of feeding. Having, therefore, in 1860, resolved to transfer all the bees I could from six hives to other

four hives, I thought it necessary to devise some plan a little quicker than the old-fashioned system of tying two hives together and tapping at them until the bees ascend into the top hive. My hives being 16 inches square outside, I made an apparatus of the same diameter, standing 3 feet 4 inches high, with an inclined plane of perforated zinc fixed in it half-way from the bottom. Standing the hive on the top I fold a sheet round the whole to confine the smoke, and rap the hive in order to disturb the bees. I then draw up a slide at the back of the apparatus and set fire to a quantity of paper prepared with a solution of saltpetre, previously put in the bottom of the apparatus, and shut down the slide. The smoke ascending through the zinc into the hive, the bees become powerless, fall on the zinc, and roll out through an aperture cut across the apparatus into a box placed against it, and made to fit close to, and above the apparatus, so as to keep the bees from ascending.

When I have smoked all the bees I can out of the hive, I detach the box containing the bees, carry them to the stock to which I intend to unite them, open the top, and take an empty hive with the top also open, turn it upside down on the crown of the fixed hive, turn the bees into it, cover them with a board, and then give the fixed hive a few puffs of smoke to stop fighting. When the stupefied bees have recovered and mixed with the others, I remove the empty box, and close the top of the hive.

I have constantly used this apparatus ever since 1860, and now my neighbours borrow it, and use it both for destroying bees, and preserving them. When sulphur is used to kill the bees the apparatus is much cleaner than a hole in the ground, and when it is used to preserve them the process is simple and quick, and few bees are destroyed, although a number always cling to the combs, to which I administer a dose of sulphur to put them out of pain.—GEO. WILSON, *Whalton.*

[No one who has once mastered the art of driving is likely ever to have recourse to fumigation. The difference, if there be a difference, in point of time, is very trifling, whilst we have proved by actual experiment that the vitality of bees is decidedly lowered by fumigation.]

OUR LETTER BOX.

POLISH FOWLS (*St. Edmunds*).—We do not consider that Polands are among the birds which best endure confinement. We believe much more is known now about poultry than there was fifteen years ago. This arises from the fact that there are ten times as many poultry-keepers as there were; and the necessity for having birds that will thrive under unfavourable circumstances has caused their habits and merits to be inquired into. The history of confinement is not a history of actual space, but of provision and management. It is possible by good catering to give in 15 feet square almost all that can be found in fifteen acres. Growing grass, fresh mould, animal life, light and air, lime grit—all these remedies counteract the confinement, and almost any fowls will do well; but Spanish, Cochins, Brahmas, will do well without them. Hence the difference. To these last Houdans may be added; they will thrive where their companions, Crève-Cœurs, will pine.

CAUSE AND CURE OF CROOKED COMBS (*Lemon Buff*).—We have always hope of a comb getting up if it has not fallen over from being too large and too weighty. A meat diet stimulates growth in the comb, and if withheld the effect is often visible in the gradual diminution and rising of the comb. Some use a strong solution of alum in water, with which they bathe the comb. Another plan is to take some silver wire, to tie the comb in the desired position, and to fix it through the thick fleshy base of it. The last is generally effectual. A less expensive plan is to cut narrow strips of diachylon plaster, and to strap it according to desire. It is desirable that Buff Cochins should be entirely buff all over. There are few without some mixture of mealy or white feathers. Both are less objectionable than black, but a little black in the tail or on the flights does not amount to a disqualification.

PACKAGE FOR EGGS (*H. C.*).—Eggs pack in a basket as well as in a box. If you prefer the latter, you must be guided by the size of the eggs; for instance, eight Spanish will take more room than twelve Hamburgs. The best material in which to pack them is dry moss. It keeps them in position, and does not move from jolting. In the ground oats, nothing must be taken away; that is the advantage, the whole must be ground sufficiently fine to mix readily in water.

FATTENING CHICKENS (*E. B.*).—October chickens should be fit to put up now to fatten, if they are for market. If for home consumption, they should be fat enough running about. Houdans bear confinement perfectly.

LINNET'S BEAK (*G.M.D.*).—File away the excessive length of the upper mandible.

LIME FOR FOWLS (*E. A. S.*).—As you cannot obtain bricklayers' rubbish, you may calcine oyster and other shells, or even bones, and scatter the white powder remaining after the burning about the poultry run. Powdered chalk, or powdered whitening would do even better, but not quicklime.

PORMICE (*C. A. J.*).—Nuts and acorns are the best food for them. The book you mention has not been published.

POULTRY BY RAIL (*Houset*).—Under the circumstances, we consider that you have no legal remedy.

BEE-FOOD—DIRECTIONS FOR MANAGEMENT (*L. R.*).—We always use burnt sugar and water in the proportion of three parts by weight of the former to two of the latter, and boiled a minute or two. You will find the best and simplest directions for management in the bee-keeper's calendar of "The Gardeners' Almanack," published at this office, price 1s., or free by post for fourteen stamps.

ERROR.—On page 143, line twenty-eight, for "may," read "many."

WEEKLY CALENDAR.

Day of Month	Day of Week	FEB. 27—MARCH 4, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year	
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.				
27	Th	Meeting of Royal and Zoological Societies	47.7	33.4	40.5	20	53	af 6	34	af 5	36	af 8	55	af 9	4	13	3	58
28	F	Meeting of Royal Institution.	49.0	33.0	41.0	15	51	6	36	5	2	9	4	11	5	12	52	59
29	S	Royal Horticultural Society, Promenade.	47.6	34.0	40.3	4	48	6	38	5	31	9	morn.		6	12	41	60
1	SUN	1 SUNDAY IN LENT.	47.6	33.5	40.6	15	46	6	40	5	5	10	15	0	7	12	29	61
2	M	Meeting of Entomological Society.	48.8	34.8	41.8	16	44	6	42	5	45	10	23	1	8	12	17	62
3	Tu	Royal Hort. Society, Fruit, Floral, and	49.7	31.9	40.8	12	42	6	43	5	35	11	29	2	9	12	4	63
4	W	Meeting of Society of Arts. [Gen. Meet.	49.6	31.0	40.3	11	40	6	45	5	after.	29	3	10	11	50	64	

From observations taken near London during the last forty-one years, the average day temperature of the week is 48.6°; and its night temperature 33.1°. The greatest heat was 70°, on the 4th, 1860; and the lowest cold 14°, on the 3rd, 1862. The greatest fall of rain was 0.81 inch.

VINCA MAJOR ELEGANTISSIMA.



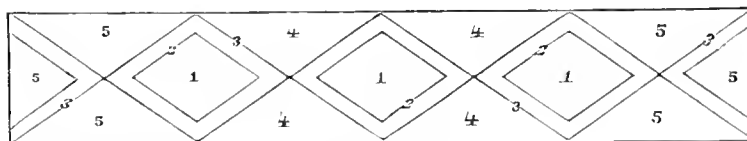
VINCA major elegantissima is one of the most useful and ornamental plants in cultivation; and so tenacious of life is this hardy trailer that no matter where it is planted, whether in the herbaceous border, the rockery, the shady shrubbery walk, or the bright and cheerful flower bed, it is equally healthy, and, what is more to the purpose, equally in its right place. In the last-named position no ornamental-foliaged plant is more useful, or can produce a more pleasing effect than this does when rightly treated. It looks well either as an edging or as a second row, for it is most accommodating in its habit of growth. The leaf, too, is one to which no fair objection can well be taken, possessing as it does that classical outline and richness of colour which are so generally admired and sought after, equalling in effect our most brilliant golden-leaved Pelargoniums.

Possessing such qualities as these, it is a matter of surprise that it is not more frequently met with; possibly the reason is that if it is not planted very early it does not look well the first season, and, therefore, as in most gardens a fresh arrangement of colours is required every

If the Vinca can be introduced into the second year's plan without being removed, it is found to have a richer and better effect than in the first season. I may add that my usual method of propagating this plant is to place a spare frame on a south border in the autumn, to work in a little sand with the soil, and to prick it full of cuttings. These are rooted by the following spring, when they are transplanted to the nursery, and after being stopped twice or thrice, in Yankee parlance, they are "let go."

MILKY WHITE POTATO.

My curiosity was aroused the other day on reading Messrs. Wheeler's advertisement, in which it is stated of this Potato, that "ripening in August, it continues in splendid condition for cooking all through the autumn, winter, and spring." I at once applied to this the maxim that "the proof of the pudding is in the eating," by having a few cooked, and certainly I was surprised and pleased with the result. The few cooked were as white and mealy as one could wish, having none of that closeness of texture which is almost invariably the case with all first and second early Potatoes when cooked at this season. Now, this is just what is wanted in Potatoes. A good cropper, free from blight, ripening early so as to be lifted before the autumn rains set in (so fatal as they are to the Potato),



1. Cloth of Gold Pelargonium.
2. Iresine Herbstii.

3. Vinca.
4. Lobelia speciosa.

5. Adonis Pelargonium.

season, by the time the Vinca has become established, and is ready to display most fully its attractions, it is removed.

The mode of treatment which I have found to succeed best is to take strong plants with at least a dozen shoots 9 inches or more in length; they are carefully taken up, retaining as much soil about the roots as possible, and are planted 1 foot apart in the beds. This is done as early in the autumn as the removal of the other plants from the beds will admit. In the following April the shoots are shortened to within 6 inches of their base, and pegged down close to the surface; they soon start into growth, breaking freely at every joint.

The young growth is stopped at the first joint, and this pinching has to be continued during the whole of the summer. The advantage of the pinching is found to be not only keeping the plants to the proper height, but also keeping up a constant succession of young shoots, the pure yellow of which is most effective.

In the past summer four parallelogram-shaped beds were planted in the manner represented above, and were much admired. The effect of the crimson Iresine placed between the two shades of yellow was very telling.

and continuing fit for table all through the winter, the Milky White must come into general cultivation, and I hope it will prove to be the forerunner of a race possessing qualities which appear to be the only effectual remedy for the blight.

Now, a word or two on cutting the haulm off Potatoes. Last summer I was strongly advised to cut off the haulm immediately on the appearance of spot in the leaf, and as I had seen this done by persons cultivating Potatoes more extensively than myself, I resolved to give it a trial. Accordingly I had a rather large breadth of the Red Apply (a very strong-growing kind, brought from Cornwall some fifteen or sixteen years ago), cut down to within 6 inches of the soil; after a week or two these Potatoes were taken up, and hardly a tuber was blighted, but the cutting appears to have materially affected the good cooking qualities of this hitherto excellent winter Potato, for instead of its usual mealy appearance when cooked, it is almost as close and "waxy" as an early kind. I am the more inclined to think this the case, because some White Rocks, of which the haulm was cut at a somewhat later period, have their cooking qualities affected in some mea-

sure, though not in so striking a manner as the former.—
EDWARD LUCKHURST, *Egerton House Gardens, Kent.*

HARDINESS OF CONIFERS.

As everything just now relating to the hardness of different kinds of Conifers is of interest, and being asked by a subscriber at Uttoxeter to state through *THE JOURNAL OF HORTICULTURE* the plants that stood the winter of 1867 here, I will now do so.

The following Conifers withstood the winter well—viz., *Cupressus Lawsoniana*, *C. argentea*, *C. gracilis*, and *C. erecta*; *Picea nobilis*, *P. Nordmanniana*, *P. lasiocarpa*, *P. pinsapo*, *P. magnifica*, which is almost identical with *Picea nobilis*; *Cryptomeria japonica*, *Retinospora lycopodioides*, *Araucaria imbricata*, *Cedrus deodara*, *Wellingtonia gigantea*, *Thuja Lobbi*, *Abies Albertiana*, and *A. Douglasii*. The last three grow rapidly; the *Thuja* grew between 4 and 5 feet last season.

Taxodium sempervirens, 36 feet high, lost 3 feet of its leader by weight of snow, but has started another, otherwise it was not injured. *Pinus insignis* shared the same fate as *Cupressus macrocarpa*.—E. CHITTY, *Outlands Park.*

CENTAUREA CANDIDISSIMA PROPAGATION.

THIS is generally admitted to be one of the best, if not the very best, of silvery or white-foliaged plants grown for bedding purposes at the present day; and though there are few gardens in the country where it is not to be found, still, as a rule, it is so in more limited numbers than its great beauty and utility entitle it to be. Placed in conjunction with flowering plants either in or out of doors it forms a striking contrast to them, while it has also the good quality of being effective from the day of planting till the end of the season. There are several reasons, however, to one or other of which may be mainly attributable the plant's not being more plentifully grown. There is, first, what many have found to be its difficulty of propagation. This I believe to be more imaginary than real. At certain seasons and under favourable circumstances this plant is quite as easy of propagation as most other bedding plants. I have on several occasions attempted to increase the stock of this *Centaurea* by putting in cuttings in September from strong plants growing in the flower garden; and although I was rather particular to have a small piece of "heel" attached to the cuttings, and to treat them afterwards in strict accordance with my ideas of their several requirements, I was wofully disappointed in the result, for only a very small per-centage of the number emitted roots, and of those that did so the majority felt an easy prey to damp during winter. This, to me, very galling circumstance might have been averted had some other treatment been pursued. I should like to know if success has crowned the efforts of any who may have attempted the propagation of this *Centaurea* so late as September, and, if so, by what treatment, as autumn is the season cuttings are to be had in the greatest abundance.

From repeated trials made at different seasons of the year, I have come to the conclusion that the spring and early summer months—say from March to July, are the best time to attempt to increase the plant. For this purpose it is necessary to have some old plants in pots; if several years old, all the better. If it is not intended to grow such in pots for another season, let the points be taken out of the strongest shoots; and if the plants be placed in just a very little heat a luxuriant crop of excellent shoots will soon be produced all down the stems. As soon as a number of these attain the length of 3 inches cut them off close to the stem, or, better, secure a small heel to each. With a sharp knife smooth the ends of the cutting, and remove carefully the larger and undermost leaves by cutting, not tearing, them off. Plant the cuttings either singly in small pots, or a number in larger ones, using soil of a light nature, with about half an inch of silver sand on the surface. Plunge the pots in a gentle bottom heat, where the top temperature may range from 60° to 70°; give no more moisture than is necessary to prevent flagging; and in two or three weeks, if due attention has been paid, there ought to be as many plants as there are cuttings put in.

As other young shoots become strong enough for cuttings sever their connection with the old plants, and treat similarly, until enough be secured, or the old plants cease to produce.

The strongest and earliest-struck plants will be ready for planting out by the end of May; the weaker and late-struck ones should be grown in pots all the year. Such will be excel-

lent for conservatory decoration during the winter months, and will make splendid plants for planting out of doors by the following May.

Another reason, as I think, which partly accounts for the comparative scarcity of this plant, is depending too much upon plants lifted from the ground in autumn for the following year's supply. This is a plant that does not generally succeed well when lifted. The woolly leaves and stems retain so much moisture, that it is with difficulty that a general decay by damping can be prevented. If the lifting of plants from the ground has to be resorted to, let it be done early in the autumn; endeavour to secure a ball to each, and pot carefully, as the roots are brittle and liable to breakage. If it is not found practicable to follow the advice given by Mr. Fish in a late number of the *Journal*—viz., to plunge such in bottom heat, let the majority of the leaves be cleanly cut off, so as to admit as much air as possible to the stems and necks of the plants, place in an airy position in a cool house, and give water only on the appearance of the stems becoming shrivelled.

The *Centaurea* will thrive well in any soil that is not too much exhausted.—J. A., *Wallhouse Gardens.*

A SELECTION OF GLADIOLUSES.

RED, CRIMSON, &c.

*Meyerbeer
*Marechal Vaillant
*Empereur Napoleon
*Prince of Wales
*Bernard Palissy
*Sir W. Hooker
James Veitch
*Fulton
*Newton
The Colonel (Standish)
John Waterer
*Ensign (Standish)
Samuel Weymouth (Standish)
Carminata (Standish)
Byron
Achille
Madame Eugene Verdier
Julia
Dr. Hogg (Standish)

Linné
Duc de Malakoff
Stuart Low

SHADES OF VIOLET AND LILAC.

*Imperatrice Eugénie
*Thomas Moore
Walter Scott
*Cherubini
*Adèle Souchet
Flore
Peter Lawson
Lady Morgan (Standish)
Blair Athol (Standish)

STRAW AND ORANGE SHADES.

James Carter
Ophir

WHITE GROUNDS.

*Shakespeare
*Eurydice
*Madame Furtado
*Reine Victoire
*Madame Rabourdin
*Princess Mary of Cambridge
*Lady Franklin
*Anais
Princess of Wales
*Belle Gabrielle
Edulia
Madame de Vetry
Marie Dumortier
Madame Binder

SHADES OF ROSE AND PINK.

*Adolphe Brongniart
*Milton
*Felicien David
*Nornie
*Rev. Mr. Berkeley
*Madame de Sevigne
*Sir Joseph Paxton
*Apollon
Madame Vilmorin
Leonardo da Vinci
Madame Basseville
Comte de Morny
Le Poussin

The above list of sixty varieties contains the cream of all the Gladioli at present in cultivation—not, of course, including the novelties of the present season, and not yet tried in our country. The thirty marked with an asterisk are, as far as my experience goes, the most choice of all. It will be seen how very short we are of good straw-coloured and yellow flowers. I am longing, and indeed hoping, to see an irruption of yellows some day, something akin to that glorious burst of yellow Picotees and Carnations which emanated some seven or eight years ago from Mr. Smith.—J. F. LOMBARD, *Dublin.*

THE VIOLET FAMILY.

WE are beginning to see and hear something about *Viola lutea* and *montana* as bedders for the coming season. I have tried *Viola cornuta* Purple and *Maure Queen*, and have put quietly a patch of each in their proper place, the herbaceous border. My experience of them tells me that is the place for them. It may be that I have not hit upon the right treatment of these wonderful *Violas*, or it may be that our northern latitude is too much for their delicate constitution; at all events they are of no use here as bedders. I intend to try *Viola lutea* and *montana*. Should they serve me as the above-named have, I shall put them along with the others and let something else occupy their place.

Unassuming as the *Violas* are, yet they are worthy of far more extensive cultivation as border and rock plants than they generally receive. Take, for instance, *Viola palmata* with its beautifully-striped flowers as a rock and border plant in a sheltered situation. It is an acquisition to any collection. Erecta, growing 18 or 20 inches high, is another desirable border plant, to say nothing of obliqua, pedata, survis, pinnata, pennsylvanica, and that gem of *Violets*, striata. — M. H., *Acklam Hall, Middlesborough-on-Tees*.

ORNAMENTAL AND FLOWERING SHRUBS.

(Continued from page 112.)

The distance shrubs should be planted apart of course depends on their growth; if of dwarf, spreading habit, they ought to be planted twice their height apart; if neither erect nor diffuse, a distance equal to the height they attain will suffice; whilst those of pyramidal or conical habit may be a distance equal to half their ultimate height apart.

Evergreens are best planted during mild weather in autumn, and before the ground becomes very wet, and has declined much in temperature; indeed, the earlier it is done after the growth is complete the better, and I should in all cases prefer September for planting to any of the later months of the year, which are not unfrequently cold, wet, and unfavourable to rooting before severe weather sets in. Early in autumn and spring are the most eligible times for planting evergreen shrubs, and it is not certain which period is the better; only if planting is performed late in summer, or early in autumn, the necessity for watering is much less than when it is done in spring, a free use of the watering pot being necessary at the latter season. Winter planting is bad, even summer planting is more successful, there being a less percentage of failures by the latter than the former mode; indeed, with careful planting and judicious watering summer planting is safe, but unless the shrubs have been but recently transplanted, and the growth is complete, there is a danger of their partly losing their foliage; hence planting early in autumn is to be preferred. The greatest drawback to shrubs succeeding, is their losing the shelter they enjoy in nurseries from close planting; hence when planted late, or in winter, the plants are destroyed if the winter prove at all severe, whereas the same kind succeeds if planted at an earlier season, owing to its becoming hardened by exposure for a time before severe weather sets in.

Deciduous shrubs may be planted at any time from the fall of the leaf up to the time of their commencing growth; but the sooner it is done after the leaves commence falling in autumn the better is the prospect of a good growth in the following year.

Previous to planting the ground should be well and deeply trenched. It is the art of securing a good and speedy growth; besides, the shrubs withstand the drought of summer and the cold of winter much better than in ground very little prepared for their reception. It may not be desirable to bring up much of a bad subsoil to the surface, but it is well to remove some of it, and to loosen it as much as possible, so that water may enter it freely. Stirred ground is warmer, and though drier absorbs water more freely. In planting, a good-sized hole, large enough to admit the roots, should be made, and some good turfy loam enriched with an equal quantity of decayed vegetable matter, as tree leaves, will prove highly beneficial, a little being placed around and over the roots. Avoid deep planting; it only leads to an abundance of suckers, and makes their removal more difficult, besides retarding the growth of the plants. If the weather is dry, a good watering may be given at the time of planting, and it would materially accelerate fresh rooting and after-growth, if a mulching of partially decomposed leaves 2 or 3 inches thick were put round to the extent of the hole made for planting. The plants should be staked immediately after planting, and otherwise made secure against winds.

Shrubs that require a particular soil for their successful growth should have that peculiar to them, if not to the extent of the whole of the ground, at least to that of the hole made for planting. It is of little use planting such as bog plants in sandy soils; proper provision should be made for them, otherwise planting is only so much labour and expense thrown away.

Shrubs may be classed as—1st, Evergreen; 2nd, Deciduous; and 3rd, Those thriving in peat soil and consisting of evergreen and deciduous species. In endeavouring to describe some

of the most desirable, I shall be guided solely by my own observations, and I shall mention none but what I consider good and worthy of every care. Soil and climate exert a great influence on plants, and if I omit some shrubs, or give a wrong estimate of others, it is through their not succeeding with me, or from my not having had sufficient experience of them to warrant an opinion. I should be glad to learn from your readers or correspondents the names of any really good shrubs in addition to the following.

EVERGREEN SHRUBS.

ARCEA JAPONICA.—Leaves large, of a pale green, mottled and blotched with yellow. Growth spreading, foliage dense and compact. One of the best evergreen shrubs, thriving well under deciduous trees; indeed, for planting under these it has no equal. I have planted it where Yews, Hollies, and Laurels would not grow, and have found it succeed. I have also planted many hundreds, and never lost one during the summer from drought, which is one of the chief causes of the want of success which attends the planting of shrubs in plantations of large, full-grown, deciduous trees, the roots of the latter making the soil almost like dust during dry periods. The *Arcea* is also invaluable as enduring the smoky atmosphere of towns, of which I have no inconsiderable experience, and has no rival in that respect except the *Rhododendron*, which succeeds better than any other shrub in a smoky atmosphere.

The *Arcea* generally attains a height of from 4 to 6 feet, but may be seen of much larger proportions when growing under favourable circumstances. It does best in sheltered situations, but is very hardy, though it does not endure a very bleak position. It is increased by cuttings, which strike if put in during August or September in sandy soil in a warm situation; but does best when inserted in a cold frame at the end of August, or early in September, and kept close for a fortnight or so, afterwards giving air and drawing off the lights in showery weather. They are rather slow in rooting, especially in the open ground, and their growth is slow for the first two or three years. Layering is also a successful mode of propagation. It may be practised early in autumn, which is to be preferred, or in spring. These remarks apply to the old female *Arcea*, now *A. japonica maculata*, to distinguish it from recent introductions, two of the most important of which are—*Arcea japonica var. fraxinea* (Female Green leaved *Arcea*). Leaves green, contrasting well with the red berries which this plant produces in great profusion, on which account it is very desirable both for the garden and for cool greenhouse or conservatory decoration; and *Arcea japonica var. mascula* (Male *Arcea*), not particularly ornamental, but indispensable for the fertility of the female plants.

These may both be raised from the seed of berry-bearing plants, sown when ripe in pans or pots well drained, and filled with good light soil. Place them in gentle heat, pot the young plants when large enough, grow them in an airy greenhouse, and harden them off in a cold frame previous to planting out. Both kinds may also be increased by cuttings and layers in the same way as the old *Arcea*.

ARBUTUS UNEDO.—Leaves oblong, green, and shining; flowers white, drooping, and sweet-scented, produced in winter, succeeded by red berries having a resemblance to Strawberries, hence its name of the Strawberry Tree. The varieties known as *rubra* and *Croomii*, have reddish flowers. It is propagated by cuttings inserted in sandy soil in a cold frame at the end of summer, or when the wood is ripe or hardened; by layering in autumn or spring; and by seeds sown in heat, the seedlings being grown in a frame and hardened well off. It requires a sheltered situation, and in cold localities a south or west wall. Height, 10 to 15 feet.

ARBUTUS DRACONCE.—Flowers white, in March and April. Leaves shining, oblong. The tree attains from 10 to 15 feet in height, and has a smooth, reddish bark, which peels off annually. Seeds, layers, and grafting, *A. unedo* making a good stock. Needs protection when young, and in cold situations a wall.

ARALIA SEBOLDI.—Leaves large, fig-like, glossy, green, clothing the plant to the ground.

ARTEMISIA ABROTANUM.—Leaves small and finely divided. This is the Southernwood, cultivated on account of the fragrance of its foliage. Height 3 feet. Slips or cuttings in spring in a shady border, or shade for a few days from bright sun. Thrives best in a sandy soil. Not particularly ornamental.

BENTHAMIA FRAGIFERA.—Its flowers are its great attraction; they are large, yellow, produced in June, and succeeded by red fruit resembling a Strawberry. 10 feet. Requires a south or south-west wall. Seeds sown in heat, and cuttings of the half-ripened wood inserted in sandy soil on a hotbed.

BERBERIS AQUIFOLIUM.—Leaves pinnated, shining, bright green; flowers yellow, abundantly produced in April, succeeded by a profusion of bright purple berries that have a fine bloom. It will grow in partial shade, but not well in very shady positions. Very desirable. Seeds, layers, and suckers.

BERBERIS ANATA.—Leaves oblong, shining; flowers yellow, succeeded by red berries. A very desirable species of rapid growth. 6 to 10 feet. See *Isis* and *Layers*.

BERBERIS DARWINI.—Leaves small, shining, dark green; flowers yellow, in March and April, abundantly produced. Whether in or out of flower very beautiful, having a profusion of shining bluish purple berries, much relished by birds. Thrives well in partial shade.

3 to 6 feet. Seeds sown in spring in sandy soil in a sheltered situation, and layers.

Berberis fascicularis.—Leaves prickly and glaucous; flowers yellow, in dense racemes, succeeded by purple berries. Flowers in spring. 6 feet. It requires a wall in cold situations. Seeds and layers.

Berberis dulcis.—Leaves small, entire, deep green; flowers yellow, in spring. 6 feet. Grows well in shade, forming a handsome bush. Seeds and layers.

Berberis trifoliata and **Japonica** have bluish green leaves, consisting of three leaflets. Flowers yellow, in spring. Very fine, requiring a warm situation, good rich soil, and partial shade. Layers. 4 feet.

Bupleurum fruticosum.—Leaves glaucous, oblong; flowers small, yellow, in umbels, in July and August. 5 feet. Cuttings of half-ripened wood in sandy soil in a frame, layers in autumn, or seeds sown in spring in a gentle heat or on a warm border.

Buxus balearica (Minorca Box).—Leaves larger than the common Box, very ornamental, succeeding in partial shade. 15 feet.

Buxus sempervirens.—Many varieties differing only in the leaves being broad or narrow, plain or variegated. The taller sorts, growing from 8 to 15 feet high, thrive well in plantations not too much shaded. All bear cutting well, and make handsome globes or pyramids. There is a very dwarf variety much used for edgings, and there is, likewise, a narrow-leaved sort that makes a very good edging for walks in plantations, where it thrives better than the broad-leaved. Plants for plantations or shrubberies are best raised from seed, as they grow the straightest, tallest, and quickest. The seed should be sown in light soil when gathered. Cuttings succeed if put in during the autumn or spring, and all the kinds may be propagated by layers.

Cerastus laurocerasus (Laurel).—Height 15 feet. Well known as being the commonest and probably the most useful of evergreen shrubs. It succeeds in most soils, and under the shade of large trees, but not where the shade is very dense. It is well adapted for a screen, and may be used for the covering of banks, the shoots being pegged down, and cut-in in summer; in such situations the effect is good. There is a variety with narrow leaves, and also one with variegated leaves. The variety *colchica* has paler and more shining leaves, and is very handsome trained as a pyramid. Laurels will bear cutting to any extent. Cuttings of the shoots of the current year taken off at the end of September or early in October, with an inch or two of the preceding year's growth, succeed in an open situation if inserted two-thirds their length in the soil, and 3 inches asunder in rows 6 inches apart. The cuttings should have the base made smooth below a joint; it is immaterial whether the leaves are removed or not if the soil is made firm about them. The following autumn they will need to be planted out in rows 1 foot apart, and 6 inches from plant to plant. Seeds may be sown when the berries are ripe, and propagation may also be readily effected by layers.

Cerastus lusitanica (Portugal Laurel).—Bushy, spreading, and tall; dark green foliage; a most valuable evergreen succeeding in partial shade. Bears cutting well, and is very desirable as standards and pyramids for terrace and architectural gardens. Cuttings, seeds, and layers. Height 15 to 20 feet.

Chamaerops foliosa.—Leaves fern-like, much divided; flowers white, produced in great abundance. A very beautiful shrub.

(To be continued).

ANNUAL PRODUCE OF POTATOES.

Just two centuries ago the cultivation of the Potato was introduced into Lancashire, and just one century ago it was unknown to the rustics of Herefordshire, whilst the number of acres devoted to its growth in those counties were as follow during the last two years:—

	1866.	1867.		1866.	1867.
Lancashire	33,690	37,509	Herefordshire	2809	2508

The number of acres on which Potatoes were grown in various countries of Europe during those years were as follow:—

	1866.	1867.		1866.	1867.
England	311,151	289,611	Norway	—	67,500
Wales	44,266	45,077	Denmark	—	—
Scotland	143,426	157,529	proper	81,809	—
Ireland	1,059,353	1,001,545	Prussia	—	3,418,610
Jersey	1,308	2,062	Württemberg	169,045	—
Guernsey	677	789	Holland	—	273,380
Isle of Man	4,302	4,011	Austria	1,308,148	—
Sweden	—	350,000	United Sts.	—	964,614

GALVANISED WIRE AN INJURER OF PEACH TREES.

I WAS visiting a neighbour a few days ago, and was admiring a fine range of wall covered with galvanised wire, and planted with, as I thought from a distance, fine young healthy trees; but on close examination I found that the wood, wherever it was tied to the wire and came in contact with it, was dead for a few inches above and below the tie, and the other parts be-

tween the divisions of the wire were quite fresh-looking. I at once came to the conclusion that it was the wire that caused the evil, and I then thought that painting the wire might have some effect if tried.

It seems that at first the shoots have the appearance of being scorched, but that cannot be, as the destruction commences on the side next the wire and wall. To what do you attribute the mischief? The trees were well and properly planted, and the border is well drained and under practical hands.—RUSTIC.

[We believe that the cause of galvanised iron wire injuring the branches of wall trees trained to it is the friction caused by the wind against its hard and sharp surface. It was once suggested that the two metals united to form galvanised iron might be a weak galvanic battery, the constant action of which upon the branch might cause the wound, but we have seen the same injury where common iron wire was used as a trellis.—EDS.]

I HAVE for many years used galvanised wire trellises for Peach and Nectarine trees. By twisting the matting round the wires where the shoots are tied, they do not come in contact with the wires, and this prevents any injury to the shoots.—J. C.

OLD-FASHIONED PLANTS.

In reference to Mr. Williams's letter in your impression of the 6th inst., allow me to state that the only way of keeping the Purple and other so-called Rockets is by frequent transplanting and by constantly raising new plants.

I have preserved the Double Dark Purple and Double Light Purple Rockets now for many years on the worst of all soils for that purpose—an extremely cold, damp, wet clay—by these methods; as also the Double Red and Double Pink Ragged Robin, the Yellow Rocket, and what are more rare still, the Tall Double Scarlet and Double White Lychnis. The last-named I have never seen in England except in my own garden.

With regard to the propagation of the Dark and Light Purple and of the White Rockets, besides occasionally dividing the plants at the time of transplanting, I also raise a great many every year by simply cutting up the flowering stems into lengths having four or five eyes each, when the blossoms have gone off, and planting them by themselves as cuttings in a small bed of light made soil. Many of these throw out nice young shoots, and to this plan I mainly attribute my having so long been able to grow, and to help others in growing, these valuable perennials. If half the trouble were taken with these really interesting plants which is bestowed upon the ephemeral bedding-out class, the difficulties in keeping them would soon vanish.

Of all this family of plants the Double White Ragged Robin is, perhaps, the most delicate, and in its case I fear there is no safety but in potting a few young rooted offshoots from time to time in case of accidents. It is a gem amongst perennials.—W. J. MELLISH, Orston Vicarage, Notts.

Will you admit a few words of remonstrance from a very cruelly treated, ungratefully used, and persecuted race?

I am a poor old-fashioned plant, though as "every dog has its day," I've had mine; for I remember years ago how I used to be watched and watered, divided and subdivided; but now I suppose it is all up with me, unless you will allow some powerful voice to be raised in my behalf, for I have lived to see all my old friends and neighbours, who used to rejoice the heart in many a day gone by, ungratefully and even cruelly uprooted from the soil, to make room for those horrid "parvenus" and gay upstarts, and I fear my own time has also come.

This is the conversation I heard to-day:—

Master.—"John, I must have all these old-fashioned flowers removed; they don't suit the present system of gardening."

John.—"Where shall I plant them, sir?"

Master.—"Oh! plant them—let me see. Oh, John, after all you can throw them on the rubbish heap. I want nothing here but bedding plants, and I have no room for anything else."

John.—"Lor, sir, it seems a pity; we sha'n't have a single flower soon, that poor old master used to love so! I don't like these new-fangled ways."

And so you see, kind Editors, my doom is fixed, for these are the very words I heard this morning; and I thought directly

I'll write to those kind gentlemen, and tell them, and then, perhaps, before we are all exterminated, they will let some one say a word in behalf of a once-loved but now neglected—OLD-FASHIONED FLOWER.

RAISING ROSES FROM SEED.

Now, as Mr. Rivers tells us in his charming "Rose Guide"—now is the time for sowing Rose seeds—"in February or by the first week in March; the young plants will, perhaps, make their appearance in April or May." Mr. W. Paul in his "Rose Garden" advocates autumn sowing: "So soon as gathered let them be sown; they will then break through the ground in the following March, and, probably, some of the Autumnals will flower the first year." But how very little is done in England in the way of raising Roses—not because our climate is unsuitable, for some of our best Remontants (all honour to their originators), are English seedlings. What a comfort, too, it is when in the catalogues one meets with an English appellation, although this is not always a sure sign, such as sturdy John Hopper; Beauty of Waltham, our best red climber; the Tea Devonensis, which still holds its own against all comers; and our new friends, charming Princess Mary and not less charming Miss Ingram, who is just going to have her first season under Mr. Turner's auspices.

It is not a task of any great difficulty to raise seedling Roses. I do not mean to cross; this would require careful study of the great Rose authorities' instructions; but any one can collect the seed pods that every season form on some of the good Roses, and have them sown, and then there is a chance of something good resulting. The older and common Roses are hardly worth taking; but such as Général Jacqueminot, Jules Margottin, Géant des Batailles, Coupe d'Hébé, Prince Camille, and Safrano, ripen seed readily in our southern counties, and out of the vast quantity of seed that is allowed to waste every year, surely something might be raised that would be worth keeping and caring for. It would introduce, too, an interesting novelty into the Rose garden for each enthusiast to have his seed plot to show his friends, and excite their envy; and even the privates in our Rose army would then feel like Napoleon's veterans, that they, too, each carried a possible Maréchal Niel in their knapsack.

If the man is to be accounted a benefactor to his race who makes two blades of grass grow where but one grew before, how much more the originator of a really good Rose? And then the delight of naming it! "Glory of somewhere," of course; or, if white, what a delicate compliment to some fair lady! or, if red, to some red coat! or, perhaps, the happy owner prefers giving it a title; for it is pleasant to have people with handles to their names connected with us—say a Marquis at least—let us say the Marquis de Carabas! as poor Béranger sang—

"Chapeau bas! Chapeau bas!
Gloire au Marquis de Carabas!"

—A. C.

THE CLOCHE.

MUCH has been written on the subject of French and English gardening of late, and it seems to have been generally admitted that while in the broad features of horticulture we are far beyond the French, there are some points on which they are equally in advance of us, and that one of these points is the production of good winter salading. Now in this verdict I most heartily agree. While they are admirable theorists in every department of horticulture, good experimentalists, and careful manipulators, yet they can show nothing comparable to some of the grand achievements of practical gardening of which we are so justly proud. Their private gardens, whether those of the nobility or wealthier merchants, are not to be named with ours, while their nurseries are very far inferior. Take the very best of those about Paris, and what are they to some of our great metropolitan establishments? "A molehill to Olympus;"—badly kept, confined in space, and limited in their collections. The public gardens in Paris are certainly fine; but here the lavish expenditure of Emperor Haussmann, a greater man than Napoleon himself, supplies those sinews of war which are so grudgingly given in most private establishments abroad: and even here I question if we are not rapidly treading on their heels. They have nothing, not even the Parc de Monceaux, to compare with Mr. Gibson's wonderful achievement at Battersea; and if the improvements in the Regent's

Park and other public gardens go on, and the roughs allow them to remain, we may hope that we shall not be so very far behind them.

As regards the salading, go when you will to the Halles Centrales—(oh! that we had such a place instead of dear, dirty, dingy Covent Garden)—you are sure to see fine blanched Endive, splendid Lettuce, and at this season *barbe de capucin* and other salading. Why cannot we do the same? Mr. H. Knight, of Pontchartrain, has given in a contemporary an interesting account of the manner in which all this is done. But the groundwork and foundation of all is the *cloche*, or large bell-glass, of which you see hundreds in all the market gardens about Paris; and unfortunately we cannot manage the *cloche*. "Not manage it!" some one will say; "why, I thought we could do everything!" Well, it is just this—it will not pay. Full of zeal on the subject, and thinking it afforded a fair opportunity for some of our glass merchants to do a "stroke of business," I went the other day to the head of one of our leading firms—Mr. Phillips, of Bishopsgate Street, and had a talk with him about the *cloche*. He had tried it, and doubtless if it could be managed it would suit their purpose, as the liquid glass which remains in the bottom of the vessels after the finer material is run off would do, and it could be made by boys; but he assured me that the straw for packing to send away cost more than the *cloches* themselves; that if a person were living near the factory where he might carry them away, it might answer, but that it would never pay to have to pack them and send them any distance from the manufactory; so that I fear it is hopeless for us to expect to obtain them.

In the course of conversation Mr. Phillips also mentioned that he had failed in endeavouring to make a glass suitable for putting over bunches of Grapes on a wall. Here the difficulty, as I understood, was that in seeking to make it of the oval shape necessary, it was impossible to avoid making the base (if I may so call it) convex, and so prevent its lying close to the wall. Perhaps some one may suggest a means whereby this difficulty can be overcome.—D., *Doat*.

CATERPILLARS ON BEDDING PLANTS.

I SEE one of your correspondents (Mr. F. Fowler, page 124), has been troubled with caterpillars on his softwooded plants, and that he thinks they are the larvæ of the Cabbage Moth. It would be well if he could settle the question satisfactorily, as it is an interesting one. I have my doubts on the subject.

In common with many of your readers I have suffered from this caterpillar plague. Having this year more than five thousand seedling Pelargoniums of the bedding class, with almost an equal number of named varieties, I found it a serious business to have them all looked over plant by plant several times during the winter, to search for green caterpillars resembling in colour so closely the leaves on which they feed. Wishing to know to what moth I was indebted for this pest, I fed a number of the caterpillars, which varied in colour from green to brown. I had little doubt they would turn out the larvæ of the Yellow Underwing, as they exactly resembled the figures of that caterpillar in Curtis's "Farm Insects." Out of eight, varying from bright green to dark brown, six moths have come to perfection, and they are all Angle Shades Moths (*Phlogophora meticulosa*). The colour of the caterpillars depends, I think, on their age, the eldest being generally the darkest. Though I am quite satisfied all the caterpillars I have seen feeding on Pelargoniums are of this kind, another species may have troubled your correspondent.—J. R. PEARSON, *Chilwell*.

IMPROVED MELVILLE'S VARIEGATED BROCCOLI.

FOR winter decoration we find these varieties very valuable. Last spring we had a bed of them mixed with Hyacinths, and they were the admiration of all who saw them. At this season one of the bright-coloured heads, surrounded with a few hardy spring flowers, and a sprig or two of Box tree, make an excellent bouquet for table decoration.

We could have sent you a good many more varieties, but those now sent will give you some idea of the strain. We hope still further to improve these, and have had some really brilliant colours selected for seed.—STUART & NEIN, *Kelso*.

[We received about twenty specimens, each differing from the others, all beautifully curled, and varying in tints of creamy

white and pink up to the darkest green and purple. Kept dwarf, and used as Messrs. Stuart & Mein state, we have no doubt they are very decorative.—Ens.]

UPS AND DOWNS OF A ROSE.

I do not know from what ancient stock I came, it was a very old and honourable one I am sure—nor whether I was budded or grafted, or grew on my own roots, not that it can be of much importance, for I have heard one authority praise one way, and another authority equally good praise the other; so I do not believe it is of much consequence, though if I could have had any choice in the matter I would rather have been on my own roots. One matter I am very confident about, that is my appearance. I was very beautiful, I say it blushing, for one does not like to praise one's self; yet everybody who came near me said the same, or thought it; bright eyes looked brighter, and sad ones lost their sorrow when they gazed upon me.

I cannot tell you what colour I was, for some named me yellow, others buff, one said I was the colour of flaxen hair with plenty of golden threads in it. I was very vain, and spread out my dark green glossy leaves, so as to enhance to the utmost the charms of my blooms. I was greatly admired—called the most beautiful thing on the face of the earth, the queen of all flowers, worth hundreds, nay thousands of common cousins living out in the open borders, that sort of country cousins who put on their best attire just for a few midsummer days, then settle down into shabby greyness for the remainder of the year. I was lovely, as I heard a little maiden say every day of the long year, for even when I had no blooms to show I had soft delicate green leaves edged with carmine, and even my scattered petals were worth gathering up for the sake of their sweet perfume.

My place in the world was in a roadside cottage window, one of those old-fashioned windows that appear to be built on purpose to suit this cold sunless England of ours, for it had looks-out every way but to the north; so that whenever the sun shone, I could revel in its warmth. My house, but a few inches in circumference, was built of the poorest, commonest material—burnt clay, and even of the burning it had had too much, for there was black in patches where all should have been red. This little house, unworthy as I thought it, was well filled, every inch of space upstairs and down was occupied; sometimes in the hot summer I fancied I could have done with a larger place to live in. My prospect from this old window was into a country lane, a lane with high hedges, and under the shelter of which Primroses and Violets grew, making the early spring months fragrant with their sweetness, and when they were over out came the rambling Dog Rose—our relationship is very distant I assure you, I would deny it altogether if I could; yet I never used to see this poor Dog Rose, that I did not wish I had been something else. My ambitious choice would have been, to be a Climbing Devoniansis, growing up among the rafters, and sunning myself in the pure out-door air, and throwing forth my golden flowers—I like best to be called yellow—beyond the reach of envious eyes, or kleptomaniac fingers, or of that cruel instrument I dread still more, the gardener's knife.

My home surroundings were of the poorest kind, a stone flagged floor scoured over with another stone, then sanded over with red gravel ground up very fine, all very fresh and clean to look at, but, dear me! when the sweeping day came I was very thankful I could breathe without lungs. This sanded floor served for carpet, and hearth-rug, and druggit. A table, a few hard wooden chairs, and a chest of drawers made up the furniture; there was neither blind, nor curtain, nor shutters; all day long I could look out into the lane, and all night up at the stars.

My master was a worker in a quarry, and I was his pride and pleasure; much care he took of me. However tired he came home in the evenings I was never overlooked or forgotten, or thrust out of the way. All my wants were duly supplied; though never overfed, I could not imagine what hunger or thirst meant.

My food was not of the richest, nor prepared on the most scientific principles, yet it supplied all my needs, and gained the desired end, growth with strength and beauty. Simple as this food was, time and thought were necessary for its manipulation. Parings from a common, half soil and half dying grass roots, were mixed up with white sand; my master never would use the red, though he had large quantities close by, and for

the white he had to walk miles. This soil and sand were then incorporated with decayed tea leaves, not the proper material I have heard say, but then it was the best my master could obtain, and I was too full of vigorous growth to care much, if I had enough. Water, and without it none of our family can live long, came from a running brook; it was soft, and cool, and clear, and seemed to possess a renewing power as it was gently poured over me night and morning. I did not like it any the less because I knew the tadpoles had played in its shallows, and the swallows cooled their blue wings in it as they flitted over it. It was better in every way for me, than the hard spring water which used to chill and damp, but never refresh.

Yes, great store did my master set upon me, always giving me the best place, the lightest, driest, sunniest corner; never shutting me up alone in a heated smoky room, often for my good opening the window when he could better have done with it closed. But, though I had a merry pleasant life, it was not all sunshine, there would come days of rain and cold east wind, when the window could not be opened, and I had to live on as best I could. Then the enemy I hate most would be sure to make his appearance. The transparent-winged but yet deceitful green fly; how it came in used to puzzle me, it must have been on my master's jacket which he hung up close to my stand, but come in as it might, it was sure to find a speedy lodgement under one of my leaves, and was sure to choose the youngest and tenderest. In great terror lest my beauty should be spoiled, I was vain enough to care for my appearance. I rolled and twisted up my leaves, making myself as disagreeable as possible, in the vain hope the unwelcome guest would be driven to take its departure; yet nothing I could have done would have produced the desired effect if my master had not come to the rescue, with his pipe of tobacco, of which he was very fond. Luckily for me, darker and rougher the weather was, and more and more he smoked, until at last the little parasite not feeling well in a tainted atmosphere took its leave. But, I always came off the worse for its visits, however short they might be, for my twisted-up leaves never opened out again in a proper manner, and the rough usage I underwent to force back my good looks was often nearly my death. I was deluged over and over again with cold water thrown at me with great force, just like the bursting of a waterspout, then followed such scrubbing, and rubbing, and shaking of my little house, that I trembled lest its very foundations should be disturbed.

Putting all together, the world did not use me ill, and my master thought so much of me, and took so much care of me, that in return I could but be and do my best. So I grew and flourished, threw out strong shoots, and leaves, and flowers, and filled that old cottage window with a rare beauty, at which passers up and down the lane stood, and looked, and wondered.

One day in the full glory of my regal beauty I was carried away from my master's humble cottage. No word of warning was given me. I did not dream of the new honour to be conferred upon me, however much I might have desired it. Strong arms deposited me safely among the soft cushions of an open carriage, the amber lining of which was very trying to my wide-open blooms. I rocked about sadly, and many of my petals were shaken off as we jostled up the narrow lane. A little girl and a King Charles spaniel were my only companions, and they were too much engaged listening to the ponies' silver bells, which made music wherever they went, to think of me, or to trouble about the falling flowers, and I did not much care for the teasing and blowing of the wind, which with the sun and the hot dry dust injured me not a little; but then we cannot have everything, and the change was grand for me. It is not often the lowly born drive out in state, and I could not help wishing my German cousins might see me and be envious. What a miserable life it must be out in the hedgerows, winter and summer, exposed to every turn of the fickle weather.

When the drive came to an end, the same strong arms carried me into a large mansion, and placed me on a marble stand in a window of a room full of costly ornaments. This window opened out into a garden full of gay, scentless flowers, on which the midday sun was shining. I could see the brightness though I could not catch one of the beams, for blind and curtain were down, shading from the out-door light, lest in its strength it should enter and injure carpet, or pictures, or gilding. I thought of my nearly always open window at the cottage in the lane, and of the sanded floor which the quarryman's busy wife ground to dust all day beneath her heavy shoes; but then no sun or air could injure it, so the door was seldom shut from morning until night. Here, in this my new place, there was a still, close, as it were, used-up atmosphere, any-

thing but good for growth and life, and there might be dust, too, of a finer though not less subtle kind.

I was greatly admired—how they all thronged around me, father and mother, and little girl; how they counted up my fully open flowers and growing buds, and looked at me as though they had never seen a *Devoniensis* in bloom before.

My little red house looked poor and mean in the stately mansion, did not suit it, did not harmonise with anything about it; so it was to be taken away, or at least put out of sight. No better way suggested itself than that of slipping the ugly old house inside of a new and handsome one. A strange one was chosen as ever any poor Rose lived in, a kind of vase with red figures sprawling on a black ground, and into this I was put; but thrust down as much as they could thrust me, there was still a broad cornice of rough red to be seen; that, of course, would not do, so my house must be thrown away, and I must be removed into the new one. I had strong affections for the house from which I had not been absent for a long time, and every inch and corner of which was familiar to me; so the more they tried to lift me out, the more tenaciously I clung. They pulled and dragged, and thrust every way but the right one, to compel me to remove, and at last succeeded, but I was torn out, not taken out, and many of my valuable roots and much good soil were left behind. I was planted in the new house in a rough disorderly manner; no care was taken of the few roots left me, some were pulled away, others put in any way. Then proud of their work they bid me go on and flourish; live and be thankful they said, then left me sure that all would be well, left me in a beautiful new home, much too good for me, and yet not meeting any of my requirements, for it was a house without drainage, and without ventilation, and beyond the reach of the vivifying sunshine, for though my window looked to the south, blind and curtains and plate glass excluded all brightness. I lived, or rather existed, in a perpetual shade. At first I wondered at the long nights and the short days, and wished the sun could find its way in to me. I did my best to live, but found it hard to do so, for every effort I made was checked or hindered.

My new master did not understand my peculiar nature as my old one had done. My greatest sufferings came to me from his ignorance. I do not believe he cared for me much, for sometimes days would pass and I did not see him; he never came to give me anything I might need, or to feast his eyes upon my beauty. I was slowly pining away for the fresh air, and the sweet sunshine, but every inlet, every avenue was tightly closed up, as if poison and plague were floating in the warm breezes. My leaves appeared to lose their tissue, and my blooms their colour. Thinking I was going wrong my master pulled up the blind, and placed me close to the glass in the middle of an August day. That was too much for me, my hold of life was too weak to sustain me beneath its strong heat, so I drooped and drooped, and hung down more and more. Then, thinking I was thirsty, he flooded me with cold water—I think it must have been from an ice store—house and cellar and surrounding moat were all brim full; I was chilled, I thought I never should be warm again. A few of my buds slowly opened—they were but dull, faded malformations of my old self. Then I pushed out little green shoots to supply the place of the dead buds; but they never came to any size, for the aphid, that great enemy of mine, found them, and soon covered them thickly over. So there was nothing left but ruin and death, for relief could not come to me as it did in the cottage, because tobacco was a forbidden evil in the newly done-up drawing-room.

Then my master thought he would try if the out-door air would bring about any change for the better, for there was no doubt I was dying. So he chose a day with a keen wind blowing—a north-east wind, from which every living thing turns away in dread; and he stationed me just where its full force would beat upon me. He did not pause a moment to see how it would fare with me when left, but in great fear of the cold from which I had no escape, ran into the house, and I daresay soon forgot me. And no wonder, for the poorest hybrid that ever opened-out a few thin petals and called itself a Rose was fairer and better.

Next day my master came to look at me. My beautiful green leaves edged with carmine were soft and black with twenty-four hours of battering: the buds were all gone—there was no hope left for me. He had killed me though he knew it not; would not believe it, probably, if told. He stood over me in amazement, his hands thrust far down into his pockets. He was thinking of the piece of gold he left at the cottage only two

months before, or of the splendid Rose tree he had made his own by a dear purchase. And then with a "Well, it is over with it!" he pulled me right up, and with a great swing threw me to the rubbish heap; and taking up his showy vase, he carried it to the marble stand in the drawing-room in safety—MAUD.

ENTOMOLOGICAL SOCIETY'S MEETINGS.

THE Anniversary Meeting of this Society was held on the 27th January, when Sir John Lubbock retired from the chair, his period of office having expired; and Mr. H. W. Bates was elected President in his stead. An address was delivered by the former gentleman, giving an account of the progress of the science during the past year, and it was ordered to be printed and distributed among the members.

The February Meeting was held on the 3rd inst. at Burlington House, when the newly elected President took the chair, and returned thanks to the Society for his election, and nominated Sir John Lubbock and Messrs. W. Wilson Saunders and Stainton as Vice-Presidents for the ensuing year. Amongst the donations to the Society's library received since the last meeting were the publications of the Natural History Societies of Vienna and Bremen.

Mr. Frederick Bond exhibited a large swollen Coleopterous larva found by Mr. Harting within the shell of *Helix cricetorum*, the inhabitant of which it had devoured, and which was considered to be the larva of the female of *Drilus flavescens*; also the cast skins of a number of the larvæ of a species of *Dermestes*, which had not only devoured the bladder coverings of a number of jam pots, but had also eaten the jam. He also exhibited a very curious specimen of the large moth, *Lasiocampa Quercii*, the wings of which exhibited the colours and markings of both sexes mixed in a very irregular manner. He also communicated a notice of the attacks of a species of larva upon a living Elan antelope, into the horns of which it had burrowed. Mr. McLachlan also mentioned an instance in which the timbers of a vessel had been greatly burrowed into by the larvæ of a species of *Dermestes*; and Professor Westwood mentioned that the same insects, which are ordinarily animal-feeders, had greatly injured a cargo of cork.

Dr. Wallace exhibited specimens of the Japanese Silk Moth, *Bombyx Yama-mai* reared in this country, where they had deposited eggs; also the *B. Pernyi*, which feeds on Oak in China; and the South African *Pachypsa effusa*, which feeds on *Acacia*, from which an attempt was being made to obtain silk in that country; likewise the cocoons of the *Liquidambar* Moth from China, the larvæ of which are used for furnishing the silk gut used by fishermen, and of which the perfect moth is not yet known. He also made some observations on the progress of silk culture in this country, in South Africa, and in Australia.

Dr. Gray communicated a letter from Dr. George Bennett, of Sydney, containing extracts from Australian newspapers, giving an account of a surprising swarm of a moth known under the name of the *Bugong*, which is eagerly devoured by the natives, and which is a species of the genus *Agrotis*, *A. spina*. They had appeared in September in such vast swarms, that the houses were filled with them, and divine service in the churches had to be suspended. It was mentioned also as a remarkable fact, that the swarms were almost entirely composed of males. A swarm of butterflies of the Australian form of *Cynthia Cardui* had also been observed at sea three hundred miles from land, the vessel being literally covered with them.

Mr. Frederick Smith exhibited a number of interesting insects, chiefly Hymenopterous, from Brazil, accompanied by notes on their habits communicated by Mr. Peckholt, of Cantagallo. Amongst them were several species of honey Bees of the genus *Trigona*; and the writer had distinctly noticed that they swarmed like the European honey Bee, a fact not previously ascertained. A species of *Pepsis* provisions its cells with Spiders ten times its own size. *Trypoxylon albicans* builds a long cylindrical mud nest, which it also provisions with Spiders. A species of *Tripteta*, called the *Burna Fly*, deposits its eggs in the skin of various animals, as well as in the nostrils of persons whilst sleeping in exposed situations.

A beautiful species of *Oryssus* from the Gold Coast of Africa was exhibited by Mr. Swanzy, and the rare *Ajatura Ionia* from Asia Minor by Mr. Trimen; the latter insect had been doubtfully referred to the genera *Pyramis* and *Vanessa*. Letters were read from Mr. Hewitson and the President relative to the question of priority of the names published in the second part of the voyage of the "*Novara*" by Dr. Felder.

Mr. McLachlan communicated a monograph on the British species of *Nemoptera Planipennia*.

Mr. Daniel Hambury communicated some further notes on the economy of the Coffee Borer of Southern India supplied by Dr. Bidie, who had been appointed by the Madras Government Commissioner for investigating the ravages of the Borer in Madras and Mysore.

The Hon. T. De Grey exhibited *Opostoca Siliciella* and *Acidalia rubricata* from Norfolk, and *Hypercalia Christmanni* from Kent; and Lord Cawdor sent a specimen of *Phlebotus phalangoides* (Blackwall) from Stackpole Court, Pembrokeshire. A letter was also read from Dr. Signoret, of Paris, requesting specimens of different species of *Coccus*, especially males, for a monograph on that family of insects on which he is engaged. The specimens should be placed in tubes in

weak spirit, since when dried it was impossible, from their small size and soft delicate structure, to examine their forms with sufficient precision.

AMERICAN WELLS.

We have seen tried at Levallois, near Paris, a simple, ingenious, and expeditious method of finding water in the depths of the earth, and bringing it to the surface. It consists in striking vertically into the ground iron pipes, screwed to each other, till they meet a spring, at the top of which a pump is placed which sucks up the water. The process, which is simple, is thus described:—

The apparatus is composed of a number of iron pipes about 8 feet 2 inches long and the diameter inside about 2 inches, the sides about one-third of an inch thick, with a screw at each end, external on one and internal on the other, so as to screw them together, and thus to form one long tube the sides of which are air-tight; also an iron ram, *a* (fig. 1), of 8-stone weight, for driving the pipes into the ground, and a suction pump, *b* (fig. 2). The pipe which should first be put into the ground to open the way has a sharp, well-tempered steel point. Immediately above this steel point, about 2 feet of the sides of the pipe is pierced with a number of small holes for the purpose of letting the water inside the tube. First the pipe is sunk in the ground about 18 inches deep, the same as a bar of iron or a stake, then about 15 inches from the ground it is bound with a large iron pedestal, *c* (fig. 1), strongly secured with bolts; it is on

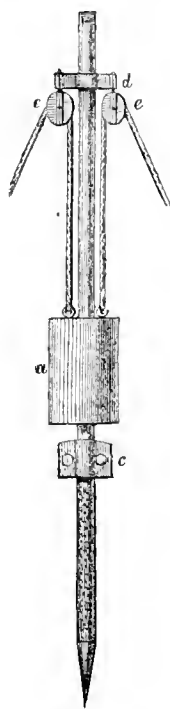


Fig. 1.

this pedestal that the blows of the ram are given to sink the pipe into the ground. The ram is an iron cylinder about 8-stone weight, with a round hole through the centre large enough to admit of its passing up and down the tube, which it surrounds, and rests on the pedestal; at the upper end of the tube there is an iron collar, *d*, to which two pulleys, *e*, are fastened, and by means of cords attached to the ram it is drawn up and let fall on the pedestal.

Such is the apparatus that we have seen working at Levallois; each blow of the ram falling on the pedestal drove the pipe about 2 inches into the ground; after eight or ten blows it was driven to the pedestal. Another pipe was then screwed on, the pedestal was raised about 18 inches and the iron collar and pulleys the same; the ram then commenced to strike to such an extent that in less than twenty-five minutes the pipes were driven more than 13 feet into the ground. A ball of lead suspended by a cord was then put into the pipes; by means of this sounding line it was discovered that there was about 3 feet

of water in the pipe; this quantity having been considered sufficient, a small suction pump was screwed to the top of the pipe, and after working it for a few seconds the water came dirty and muddy at first, then clear and limpid like a spring.

Such is the experiment that we saw at Levallois; it took place in the middle of a sand pit that was worked by a builder named Doucet; the ground appeared hard, with a clay bottom. A similar experiment took place a few days previously not far from there, upon the ground around the quarry. The pipes, at least 20 feet long, had to pass through a bed of flinty pebbles about 13 feet thick; the experiment lasted three hours; the pipes were then in their place, and the pump gave plenty of clear fresh water. The pipes can be drawn out of the ground by means of a simple wooden lever.

This process and the apparatus for putting it into practice are of American origin, and have been improved on by an Englishman named Norton, who has a patent for it. A Frenchman (Comte de la Fete) took an active part in the experiment.

Having read this you will say to yourself, as we did after seeing the experiment, What is the use of this process, and in what cases can it be applied? The indisputable merit of this invention is that in many instances water can be procured in a few moments and at very little cost. In all alluvial ground, in clayey or sandy soils, iron tubes can be put into the ground in a few hours and American wells made. They are easily made on low grounds and table lands. If steam tillage is one day established in the world, as we think it will be, the Norton pump will become an almost indispensable auxiliary to the steam apparatus. In a word, we believe in the practical utility of this operation, and have faith in this invention.—(*French Journal of Agriculture*.)

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

TRICHOCENTRUM ALBO-PURPUREUM (Purple and White *Trichocentrum*).—*Nat. ord.*, Orchidaceæ. *Lim.*, Gynandria Monandria. Native of the Rio Negro, in North Brazil. Petals maroon brown, tipped with yellow; lips white, with two purple blotches at the base.—(*Bot. Mag.*, t. 5688.)

BEGONIA SUTHERLANDI (Dr. Sutherland's Begonia).—*Nat. ord.*, Begoniaceæ. *Lim.*, Monœcia Polyandria. Native of the western mountains of Natal. Flowers coppery yellow. Stalks and veins of leaves crimson.—(*Ibid.*, t. 5689.)

HYPOXIS ELATA (Tall Hypoxis).—*Nat. ord.*, Hypoxidaceæ. *Lim.*, Hexandria Monogynia. Native of Natal. Flowers golden yellow.—(*Ibid.*, t. 5690.)

ODONTOGLOSSUM ALEXANDRE, var. TRIANE (Dr. Triana's Princess of Wales's *Odontoglossum*).—*Nat. ord.*, Orchidaceæ. *Lim.*, Gynandria Monandria. Native of the New Granadan Andes, near Bogota, at elevations of 7000 or 8000 feet. Sepals white, with one circular rosy spot in the centre; petals white; lip white, barred, and spotted with rose.—(*Ibid.*, t. 5691.)

STAPELIA PLANTII (Mr. Plant's *Stapelia*).—*Nat. ord.*, Asclepiadaceæ. *Lim.*, Pentandria Pentagynia. Native of Australia. Flowers purplish brown, barred transversely with yellow.—(*Ibid.*, t. 5692.)

HYPERICUM FATULUM (Spreading St. John's Wort).—*Nat. ord.*, Hypericaceæ. *Lim.*, Polyadelphia Polyandria. Native of Japan. Flowers large, and bright yellow.—(*Ibid.*, t. 5693.)

PELARGONIUMS.—"In *Emperor* we have what is in our opinion the premier flower of the season; for in regard to its size, its symmetry, its colouring, its outline, and its centre, it approaches as nearly as it seems possible to attain towards perfection, and it appears to have also the constitutional vigour which is necessary to secure the full development of these good qualities. The variety must be classed among the salmon rose sorts—a group which contains many other kinds of remarkable beauty. *Rob Roy* is quite distinct in colour, being one of the purplish rose group; it also is a flower of first-class properties, not so large as *Emperor*, but in regard to form and colouring equally perfect. Both sorts have gained first-class certificates at the hands of those lynx-eyed and severe critics—the London censors of flowers, which is a sufficient indication of their merits."—(*Florist and Pomologist*, 3 Series., i., 25.)

NOTES AND GLEANINGS.

THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY is to hold three Exhibitions in the Music Hall, George Street, Edinburgh, during the present year. The first of these is to take place on

April 1st, the principal subjects being Hyacintha and other spring flowers, Camellias, Azaleas, and forced shrubs; but prizes are also offered for Pine Apples, Grapes, Strawberries, Apples, and Pears, and for Vegetables. Altogether there are sixty-three classes, in each of which two prizes are offered, and in some three. The second Show is fixed for the 10th of June, and is to consist of Stove and Greenhouse Plants, Roses, Pelargoniums, Heaths, and other flowering plants, for which there are twenty-three classes, whilst for Fruit and Vegetables there are nineteen classes. The two last-named have at the Autumn Show, to be held on the 2nd of September, thirty-five classes, whilst to Flowers twenty-five classes are allotted. There are, in addition, classes for amateurs and cottagers; and special prizes of £5, £3, and £2 are offered for six bunches of Grapes of not less than four varieties.

—THE 29th inst. is the last day on which entries can be received for the INTERNATIONAL HORTICULTURAL EXHIBITION AT GHEENT, and which is to be held there from March 29th to April 5th. Intending exhibitors have, therefore, no time to lose in sending notice of their intention and the amount of space which they will require to the Assistant Secretary, M. Edmond Clans, Rue Digne de Brabant, 20, Gand, Belgique. We may mention that the classes are about the same in number as at the London International Horticultural Exhibition of 1866, and consist of various classes for New Plants in and out of flower, Orchids, Palms, Cycads, Pandanads, Ferns, Lycopods, Arads, Caladiums, Marantads, Bromeliads, Stove and Greenhouse plants, both flowering and ornamental-foliaged, Bulbs, Trees, Shrubs, Fruits, and Vegetables, the last two, of course, much limited in the number of the classes by the season. Altogether, for the above and other subjects too numerous to mention in detail, there are 241 classes; and from the high position which the Belgians have taken at similar Exhibitions, we may expect a very fine display.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE increasing temperature of the atmosphere will now communicate warmth to the soil sufficient for the vegetation of all kitchen-garden seeds, therefore no fine day should be allowed to pass by without sowing some of the many sorts of seeds as follows:—*Brussels Sprouts*, sow thinly on beds of rich well-prepared soil, and cover the seeds evenly and lightly. *Cabbage*, sow the Covent Garden Superfine Early Dwarf, also the Dwarf Green Curled Savoy. Let the soil of the beds be well pulverised, scatter the seeds thinly and evenly, and cover them lightly with fine soil. *Cauliflower*, sow the Covent Garden Improved, or the Frogmore, on a slight hotbed, or under the shelter of glass. *Peas*, sow the Champion of England and Ne Plus Ultra, as the best early kinds of Wrinkled Marrows. *Parsley*, this of all vegetable seeds requires the longest time to vegetate, and therefore it should be one of the first sown. Slight hotbeds may yet be made to forward *Radishes*, *Carrots*, *Potatoes*, *Lettuces*, and *Cauliflowers*; also *Peas* and *Beans*, and some sweet *Herbs* if wanted early. If these auxiliary beds are hooped over and covered with mats they will answer well enough after this time.

FRUIT GARDEN.

Attend to the protection of the blossom of Apricot and Peach trees, and see that the recently planted standard fruit trees are staked, to prevent their being injured by high winds.

FLOWER GARDEN.

Many of the spring bulbs will now be showing bloom; it will, therefore, be necessary on a dry day to hoe the beds over, so as to freshen them up and make them a little neat. After the late frosts the lawn should be raked over with the daisy rake, to clean the grass of wormcasts or stones, and be rolled with a heavy roller at least once a-week. Where the grass is coarse it is a good plan to have it mown, cutting it close to the ground at this season; and where the herbage is thin, and does not cut well, a little Dutch Clover seed should be sown, and afterwards thinly covered with some rich soil. To those parts of the lawn which soon burn up in dry weather apply a dressing of wood ashes and soot, with a little sand, or, if more convenient, give a good soaking of liquid manure. Relay and repair Box edgings and grass verges, so as to have everything ready for trimming the walks as soon as the weather is favourable. Most of the hardy Roses being now pruned, the beds may receive their spring dressing. Nightsoil is said by Mr. Rivers to be the best manure to use, and if disinfected is not

objectionable; but if not disinfected it will be better to trust to the drainage of the dunghill, or to a dressing of guano. Plants that were much infested with green fly last season may be cleared of the eggs of that or any other insect by syringing them with water at a temperature of 160°, or by painting them over with lime, soot, and cow dung, mixed to the consistence of thick paint with strong soapuds. This is a certain remedy. The whole of the pleasure grounds should now have a regular cleaning—grass, gravel, borders, beds, and all, except, indeed, where alterations are going forward. Let all planting be finished as soon as possible, if other parts of the alterations have to stand still for a time.

GREENHOUSE AND CONSERVATORY.

Old-established specimens in the conservatory need not be potted for the next six weeks; old plants in general do not require to be so early potted as the young portion of the collection. The varieties of the Chinese Primrose are very useful from September to May, on account of their flowering so early in the autumn. A small quantity of the seeds may now be sown, and three more sowings of them made in April, May, and June will carry on the succession. Cuttings made now from forced Anne Beley Pink will be ready to be planted out by the end of April or beginning of May, as will also cuttings of other Pinks and Picotees now being forced. Be careful of bulbs when they have done flowering; the best mode of treating them is to take them out of the pots and plant them in a cold frame in any light soil; afterwards they come in useful for spring flowers in the borders. Those who want their Passion Flowers, Ipomaeas, and other strong-growing climbers to flower late in the season, when families return to their country seats, will now begin to prune their conservatory climbers. Of all ornamental plants, beautiful festoons of free-flowering climbers excite the greatest interest. From this time to the end of May some of the tribes in the greenhouse will want potting, beginning with seedlings and store plants. The greatest care is necessary in the selection of proper composts for different families. Good friable loam, fibrous turfy peat, leaf mould, and sand are the proper materials from which composts for all kinds of plants may easily be made; one-third peat, one-third leaf mould, and the other third of loam and sand, will make a suitable compost for young plants of most species in cultivation. Older plants will require the proportion of peat lessened, and that of the loam increased. Sandy peat alone is used for Heaths, Epacris, and the like; but the more robust of these and all the Chinese Azaleas, ought to have one-third leaf mould added to their compost. Two-thirds loam and one-third leaf mould, charcoal, and sand, form a good compost for Orange trees, Neriums, and many other strong woody plants. Charcoal and ground bones make the best drainage for all plants, and a greater quantity of them may be used in that way than of potsherds, thus making the drainage more efficient, and yielding a greater store of nutriment for the more active roots.

STOVE.

Orchids and other plants which have been kept in a temperature of 60° during winter, will require a gradual increase to 65°. Young or weak specimens of Orchids had better be kept in the coolest part of the house till all their buds or eyes are fairly in growth, otherwise the more forward buds may take the lead, and the rest may not start at all. Cuttings made now of the strong tops of all the showy Clerodendrons will make handsomer plants than their parents. They are very useful and showy as late summer and autumn plants for the conservatory. Continue to pot as the plants begin to grow.

FORCING PIT.

Gardenias and young Orange trees forced for their blossoms will now require a strong moist heat of 75°, with a bottom heat of from 80° to 90°. Many of our common border plants will force from this time if taken up with balls, potted carefully, and kept in the shade during the first week. Common Auriculas and Polyanthus will answer well in this way; leaf mould is the best material for them under this treatment. The evergreen Berberises are good plants for forcing, and they are much sweeter when they are forced. Paphnes do not like leaf mould so well as poor sandy loam, in which they may be easily forced. All the herbaceous Paeonies may be forced in pure sand, or any refuse from the potting bench, and they require no preparation beforehand.

PITS AND FRAMES.

The plants here, which hitherto have been kept quite dry, may now receive a gentle watering on some fine sunny morn-

ing, and be encouraged to grow a little. Give plenty of air in the daytime, but cover securely at night. Proceed with the potting of the autumn-struck plants, and the pricking-out of tender annuals, which should always be attended to before they become crowded in the seed pots, and encourage the plants afterwards in a close gentle heat until they are established in the new soil. Pot *Tigridia pavonia* and *conchiflora* in light turfy soil, putting two bulbs in a 18-sized pot, and placing them in a warm frame or forcing house until they begin to grow.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Peas.—We lately instanced how the open galvanised wire netting would protect from larger birds, but of course would not protect from rats and mice, for which trapping and other means must be resorted to. A new Pea seemed to have quite a run of intruders upon it. Very simple remedies are often effectual. One of our men, who has a garden, says the mice never burrow after his Peas, as he always sows some soot on the ground over the rows, and draws a spade gently over it. We have tried it with several rows, and not a single hole has been made in the course of a week. We presume that it will be effectual so long as the ammonia is given off strong. When other rows with stokehole ashes thrown over the surface have been visited, though little injured, not a single dig after a Pea has been made as yet in these sooted rows. No better surface-manuring could be afforded the Peas, and we hope, if not more generally known than it was to ourselves, that some sufferers may receive benefit from the soot-sprinkling. In many gardens now, the due preparation of the ground is not of more importance than the securing seeds and young plants after sowing or planting.

We have not previously grown Maclean's Little Gem Pea, but we are much pleased with its appearance, as it is coming on in pots. We tasted some of the Peas after germination had commenced, and, so far as we could judge, it seemed superior in flavour to any dwarf Pea suitable for pots. When grown in pots or in the open ground, it looks as if every Pea should have 2 or 3 inches. Our plants are now in 5-inch pots, three plants in each pot, under the glass of a frame, and by the time we shut up more closely our first orchard house we will transfer these Peas to 8-inch pots, rendering the soil firm at the sides. On the whole, we prefer sowing in the pots in which the Peas are to produce, but large pots take up much room, and we only had the seed lately, and wished to forward the Peas for early gathering. Room for three months to come is a serious matter with most of us, with whom every inch of glass must do its utmost. The being obliged to cram, keeps the inventive faculties ever on the stretch, and frequent movings involve a great amount of labour, which would be mostly saved were there a place for everything. Early vegetables must often now be obtained, and large flower gardens supplied, though in summer it would be difficult for a stranger to find where the plants came from.

Cucumbers.—Most of the plants intended for early spring work are under a frame on the top of a common hotbed, made with materials as lately detailed, with but little preparation, and the plants look well and strong, filling the pots with roots—after the second potting one plant in a pot. We have managed to clear a five-light pit supplied with hot water, have taken the earth in, and early next week, after having everything ready, we will turn the plants into the pit in a fine day, when the soil is nice and warm. Most likely we will try some in the seed box, and others as soon as we can obtain materials, and then there will be a race between the hot water and the frame. At an early period raising plants in the frame is the most economical, unless high temperature from hot water is required somewhere else. Our frame is very shallow, but that is no great disadvantage, for as the leaves of the Cucumber plants were coming too near the glass, we raised the frame the thickness of three bricks at the corners, just removing the banking-up to place a flat piece of board as a rest across the corners, and then the bricks were placed above the boards. Two bricks might have done, but we did not want to be troubled again, and it was as well that on the bright days at the end of the week the leaves should not be too near the glass. In all such raising it is of importance that sweet material should be packed at the back, and for at least 6 inches up the frame. That done, we banked firmly as high as the boards with what we could find handiest.

There is another advantage in raising the frame and thus keeping it banked outside with fermenting material. More top heat is thrown in through the boards, and the bottom heat in the bed is rendered more moderate. This helps to remedy the chief drawback in frames and pits heated by fermenting material only. In this bed there was no difficulty, by means of covering, in keeping the atmospheric heat up to 70°, and even much higher, at night if we wanted it; and in sunny days we could have just what temperature we liked best; but in very cold, stormy, sunless days, even with little or no air given, the atmospheric temperature would fall to 65°, or even lower. Now, here the hot water would so far have the advantage, that according to what was said the other week, we could easily have a temperature of from 60° to 65° at night, and up to 70° in a dull day. The old plan of increasing the atmospheric heat over a dung bed by sending heat by linings through the fermenting material, had a tendency to increase the drawback in two ways—first, by unduly increasing the bottom heat; and, secondly, by making the atmosphere when the bed was covered up at night warmer than during the day, if the day was dull and sunless. This prolonging at night of vegetation by heat—for it can hardly be called growth, as then there can be little or no solid addition—is fruitful of many evils which can be so far counteracted when we can obtain atmospheric heat, by banking-up outside, in a bed or pit, without that extra heat passing through the part where the roots are growing. By proportioning covering at night, and air-giving during the day, according to the weather, we can regulate a dung bed as we would one heated by hot water, so as always as a general rule to have the highest temperature when there is the most light.

Mushrooms.—Earthed-down a fresh piece of a Mushroom bed just as the previous bed was becoming like a sheet with small Mushrooms, and larger ones were still coming rather plentifully on older beds. In making a bed at this season we are forced to lose some of the strength of the dung in order to have it in a dry mellow state for the reception of the spawn. We pile the droppings and shortish litter in a heap, covered over with long litter, and if the material is so wet as not to become somewhat dry by this process, we cut some long litter short with a billhook, and mix it with the rest, and that, by causing it to heat, will dry it enough for our purpose. In making our shallow beds we have them as firm as possible, making firm again by beating after spawning, and on putting on from 1½ inch of fresh rather stiff soil we beat firmly again, and then, watering the surface, draw firmly a clean spade along it, so as to have the surface smooth. This secures the easy cleaning of the bed, and more especially when a little covering of hay and litter is used for maintaining an agreeable temperature. In large ridge beds out of doors the firmness, though important, is not so essential as in shallow beds in-doors.

We may here state that A tells us that, obtaining no Mushrooms, he gave his beds a good watering with water nearly at the boiling point, and in a few weeks had plenty of Mushrooms, but after one good gathering there were few more. B tells us that he followed the example of A, and has never had a Mushroom, and our opinion of the practice is asked. We reply that it must ever be looked upon as a bit-or-miss practice. We dislike to water much in winter if the air is moderately moist; or if not, we would have a slight sprinkling of hay on the bed in preference to much watering in the short dull days. When wanted we often prefer making a few holes and watering the bed back and front, instead of watering all the surface. We never use boiling water, except when troubled with woodlice, which we seldom are until the end of March or April. Then with a little dry hay we entice them to the back and front of the bed, and when we pour hot water there it sinks down, and does not extend far from the back or the front. Had we a bed cold, the spawn in dry material, and were sure none had begun running in the soil, we would not hesitate, if the soil was rather dry, to give it a good watering with water near the boiling point, because that would heat the soil, and the heat would decline to about 80° or 100° before it reached the dry material. If, however, the spawn was already running in the soil, and coming near the surface, we should expect it to be killed outright by such warm waterings. If we would be safe, then, we should keep from such scalding work. It is better to secure moderate moisture and an equable temperature by a slight covering of the beds. In heated houses it is more pleasant to see the beds bearing without any covering, but in that case it is easy to apply atmospheric moisture, or to give waterings judiciously when necessary, not using the water warmer than from 80° to 100°. In such a case a watering from manure

water made from old cow dung, deer dung, sheep dung, &c., often does wonders. We have never ventured on very hot water, except in the cases indicated, for the destruction of woodlice, and, unless in some extreme case, we should never think of so heating a bed, having often proved that though spawn will remain fresh a long time in a low temperature, it becomes weak, and perishes in a high temperature. From 90° to 100° may be considered the highest limit of safety.

To another correspondent, troubled with slugs and snails, and who proposes dusting with lime and watering with lime water, we would say, Never let your bed have quicklime either in a solid or liquid form. Nothing, not even the boiling water, will be more ruinous to the spawn and the young Mushrooms. Trap with greased cabbage leaves, brewers' grains, lured with a candle at night—anything or everything except the lime water; for we know of nothing more certain to spoil a bed, according to the strength and the time it is applied. If merely used on the surface before any Mushrooms appeared it might do no harm, but then it could do no good, as it would soon become as mild as a piece of chalk, and if it did no harm then to the Mushrooms it would as little inconvenience the slugs and snails.

ORNAMENTAL DEPARTMENT.

In fine days Ranunculuses and Anemones cannot be too soon planted; all manure for them should be placed a good depth from the roots. Carnations and Picotees in pots, if well established, should ere long be turned into their blooming pots. Three plants of a sort look well in a 12-inch pot. Where flowers without much dressing are required, one twisted wire support in the centre would do for the three. Nothing suits them better than fresh sandy loam, with about one-eighth part of sweet rotten hotbed dung. All the nostrums of half a score or more of ingredients for composts may now be numbered with the things that were. The finest Auriculas we ever saw were grown in sweet mellow loam, with a little very sweet, well-aired, leaf mould, and then in the spring they were top-dressed with sweet dry cow dung from two to three years old, and were watered with clear manure water as wanted. The Auriculas should still be protected from frosts and heavy rains, but have air back and front in all mild weather.

From the forcing pit bulbs are coming in; and shrubs, as Rhododendrons, Lilacs, Deutzias, and Roses, are adding their attractions. These should be all raised out of the bed and kept in the coldest end of the house before being taken to the conservatory, and they and bulbs taken thither, or to the dwelling house, should be moved before half of the flowers are open, that they may continue longer in bloom. Manure water, though clear, and bits of charcoal, will help bulbs in glasses.

Camellias in bloom want a considerable amount of water, and those finished blooming may as well have a little more heat in a vinery, or in a corner of the conservatory where they can be kept by themselves. Heaths now require more air in fine weather. Epacris will do with less until the long days come. Any plants of these, and of winter-flowering Heaths done blooming, should be kept stationary for a few weeks before pruning them back to make new wood for another year; the resting a little seems to suit them better than pruning them back at once. All young plants in the greenhouse and stove beginning fresh growth may now be repotted, especially when a little additional heat can be given to them.

Our window gardeners who kept their boxes or vases of Scarlet Pelargoniums in their spare room or garret, should now examine and give them a little water if very dry. Never mind if they are almost leafless if the main part of the shoots are sound. By March place them in the light; prune any that are decayed; give a little water at a time, making holes with a wire or pointed stick in the soil; and as soon as growth commences, and the leaves are the size of a shilling, remove what you can of the surface soil, and dress with equal parts of loam and rich compost, as sweet rotten dung. Thus managed, these plants, though never repotted, will bloom better and better every year—we cannot tell for how long; but we have seen some never turned out of their vases for nearly twenty years, and, if possible, the last summer was always the best.

Could we find room we would have a large number of cuttings of Verbenas, &c., inserted, and Pelargoniums potted. It must not be forgotten to sow Lobelia, Perilla, Mignonette, all tender annuals, especially of the Cockscomb tribes, and Amaranthus melancholicus in a gentle hotbed. The Mignonette to be hardened a little when an inch in height. This, if well tended, will cost little labour and come almost as soon into bloom as that sown in autumn and protected all the winter.

To have good rows of young Lobelias from seed it should be sown before the end of the month, and the earliest sowing pricked-off and kept in a slight hotbed until established. Pelargonias sown now with such help will make fine beds in the flower garden, and so will Verbenas, if any of our readers will be satisfied with a great variety of seedlings, instead of groups of one colour. Such plants as Antirrhinums, and Pansies English or Belgian, will bloom early in summer if thus assisted a little now, and that help may easily be obtained where stable dung or other fermenting material may be had, and there are leaves, fresh or half decomposed, or the remains of an old hotbed, to go to. Secure the heat and do not trouble much about its rankness if you can cover with from 8 to 12 inches of sweet material through which no noxious steams or gases will come; but make sure of that if you do not sweeten your fermenting material. With the best part of old hotbeds we are never long in want of a genial bottom heat when we can obtain a few loads of dung from the stableyard. When mowing commences in the pleasure ground there is still less difficulty, but there is more danger without carefully keeping down the steam, and grass itself soon flares out its heat, but it will yield a regular heat a long time when mixed with straw litter. When using, with a great saving of labour, such rough-and-ready materials, we say, Be sure that nothing but the heat comes up into the atmosphere of the place; and though we often find a covering of 6 inches quite sufficient, and have many tender plants in a similar bed under a frame now, we would advise beginners not to trust to less than 9 inches at first.

We cleared out the beds from two frames the other day that had not been quite bottomed for two years, and thus had a fine lot of rotten decomposed material for our flower beds; but we picked enough rather dry half-decomposed litter and leaves to make a covering over the fresh litter as brought from the stable, placed in the hole, trodden, watered, &c.; and the bed being thus covered, the heat which otherwise would have escaped in the process of fermentation will be brought at once into use, and after various crops and sundry turnings, the bed will probably end in being planted with Cucumbers and Melons. Such extemporised beds, where nothing better is to be obtained, will always be of use for securing produce early from the kitchen and flower garden. Some people now expect Celery at midsummer, and without the help of heat now it is impossible to have that and many other crops at all early.—R. F.

COVENT GARDEN MARKET.—FEBRUARY 26.

THERE is a slight improvement in business, and prices have an upward tendency for best articles in general consumption. French imports comprise Asparagus, Potatoes, Radishes, Artichokes, Lettuces, and Endive. Home-grown produce from the market gardens is largely supplied, and meets with a steady sale. Of Apples and Pears the quantity is limited. Retarded hothouse Grapes are very good.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples ½ sieve	3	0 to 5	0	Melons..... each	0 0 to 0 0
Apricots doz.	0 0	0 0	0	Nectarines doz.	0 0 0 0
Cherries lb.	0 0	0 0	0	Oranges 100	3 0 7 0
Chestnuts bush.	8 0	14 0	0	Peaches..... doz.	0 0 0 0
Currants..... ½ sieve	0 0	0 0	0	Pears (dessert) .. doz.	4 0 8 0
Black do.	0 0	0 0	0	Pine Apples lb.	6 0 10 0
Figs doz.	0 0	0 0	0	Plums ½ sieve	0 0 0 0
Filberts..... lb.	1 0	0 0	0	Quinces doz.	0 0 0 0
Cobs..... lb.	1 0	0 0	0	Raspberries lb.	0 0 0 0
Gooseberries .. quart	0 0	0 0	0	Strawberries... per oz.	3 0 0 0
Grapes, Hothouse. lb.	8 0	12 0	0	Walnuts..... bush.	10 0 14 0
Lemons 100	8 0	12 0	0	do. per 100	1 0 2 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes doz.	3 0 to 4 0	0	Leeks bunch	0 3 to 0 0	0
Asparagus 100	7 0	20 0	Lettuce per score	1 0	1 6
Beans, Kidney 100	0 0	3 0	Mushrooms ... pottle	1 0	2 0
Beet, Red doz.	2 0	3 0	Mustd. & Cress, punnet	0 3	0 0
Broccoli bundle	0 6	1 6	Onions..... per bushel	2 0	5 0
Bruss. Sprouts ½ sieve	2 0	2 6	Parsley..... per sieve	4 0	5 6
Cabbage doz.	1 0	1 6	Parsnips doz.	0 9	1 0
Capsicums..... 100	0 0	0 0	Potatoes..... bushel	4 6	5 6
Carrots bunch	0 6	0 8	Kidney do.	4 0	6 6
Cauliflower doz.	3 0	6 0	Radishes doz. bunches	1 0	1 0
Celery bundle	1 6	2 0	Rhubarb bundle	0 9	1 0
Cucumbers..... each	3 0	4 0	Savoy doz.	1 0	2 0
Endive doz.	1 0	0 0	Sea-kale basket	2 0	3 0
Fennel bunch	0 3	0 0	Shallots lb.	0 8	0 0
Garbe lb.	0 8	0 0	Spinach bushel	2 0	4 0
Herbs bunch	0 3	0 0	Tomatoes..... per doz.	0 0	0 0
Horseradish .. bundle	3 6	4 0	Turnips bunch	0 4	0 6

TRADE CATALOGUES RECEIVED.

Sutton & Sons, Reading.—Suttons' Farm Seed List.—Supplymentary List of Flower and Vegetable Seeds.

Ballantyne & Son, Dalkeith.—*Catalogue of Forest and Ornamental Trees, &c.*

TO CORRESPONDENTS.

*. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix upon the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

BOOKS (*Heaton Hall*).—When the volume on laying-out gardens is ready for publishing, which it will be in a few weeks, its title and price will be advertised. It contains so many plans, that the printing is delayed. (*C. J. D.*).—Mr. W. Paul's "Rose Garden," price 6s. 6d.

WILD FLOWERS (*T. J.*).—There will be various indexes, so that the plants can be at once referred to, for the plates are all numbered.

WIRE NET FOR PROTECTING GLASS ROOF (*W. D.*).—There are no notes on the subject. You can obtain wire net of any of the makers who advertise in our Journal. Unless small-meshed it would not protect the glass, and if small-meshed then it would shade too much.

DRESSING WHEAT WITH ARSENIC (*G. G.*).—Many farmers mix this poison with their seed wheat, with the intention of destroying the spores of the smut fungi that may be upon the grain. It is a dangerous practice, and we believe does not effect the desired purpose. A much more certain dressing is to wet the grain with strong brine, and then dust it thoroughly with lime.

GARDENERS' EXAMINATIONS (*Alpha*).—Two examinations are held annually. Any gardener may be examined. If you write to Mr. Richards, Assistant Secretary, South Kensington, he will send you full particulars.

GEONOMA MAGNIFICA FLOWERING (*H. Currie*).—We are informed by Mr. Smith, Curator of the Kew Gardens, that the *Geonoma magnifica* flowered in the stoves there last year, and is now showing flower again. He does not consider it at all a rare occurrence, as all that is wanted is to have the plant in good health, when it will flower almost continuously.

HOUSE SEWAGE FOR STRAWBERRIES (*One Who Wishes, &c.*).—As your soil is light and dry, cover the surface of the bed with cocoa-nut-fibre refuse an inch deep. You may apply the sewage, diluted with eight times its bulk of water, once a week, but not until the blooms of the Strawberry plants are open.

SMALL FARMING (*Yardley*).—If you forward thirteen postage stamps with your address, and order "How to Farm Two Acres Profitably," you will have a small book sent you free by post that will give you the information you need. It includes the management of cows and pigs, and if you have twenty acres you have only to multiply by ten every space of ground particularised.

MULCHING AND MANURING ROSES (*G. H. M.*).—"Roses like mulching at all times. If the mulching is not objected to as unsightly, it may be allowed to remain. Peruvian guano may be used lightly; one handful may be dissolved in a stable bucketful of water, and some of the liquid poured over the ground for an 18-inch radius round the stem. After the first series of flowers this may be practised with good effect, especially where the cultivation is not high, or where the staple of the soil is inferior."—*W. F. RADCLIFFE.*

ROUND PLANTS AT BATTERSEA PARK (*L.*).—Your query was answered in our Journal on January 30th, page 99.

COCCOLOBA PLATYCLADA.—*J. Bryan* wishes to know where this plant can be obtained.

PROTECTING PYRAMID PEAR TREE BLOSSOMS (*H. F. Foy*).—Your mode of protection will be excellent if the stakes be made firm, and the protecting material be put on so as not to touch the blossoms; it should be secured by string to the stakes. It will not be necessary to put on the covering until the blossoms are far advanced towards opening, then you may place it over the trees at night, and remove it in the morning if the day be fine; but if frosty it may remain on. When the weather is mild and fine the protection should be removed by day—indeed, it should only be used when the air is frosty. Protection will not be required after the trees are furnished with leaves. Of the materials you name, tiffany would be the best.

SALTING ASPARAGUS BEDS (*Halfpan*).—Salt is best given to Asparagus over the surface as a top-dressing. Employed in the making of the bed it would be merely thrown away. Bishop's New Long-podded Dwarf and Advance are excellent dwarf Peas for early crops, and Hairs' Dwarf Mammoth is very good for a main or late crop.

SELECT ACHIMENES (*Bellis*).—*Ambrosie Verschaffelt*, lilac white with radiating lines and carmine spots; *Baumanni hirsuta*, violet purple; *Margaretta*, white; *Longiflora major*, blue; *Sceptum*, vermilion, with rich markings; and *Carminata elegans*, rosy carmine.

SELECT GLOXINIAS (*Idem*).—*Robert Fortune*, rose belt and lips, tube white, finely mottled; *Cerulea variegata*, porcelain blue, streaked with white; *Striata maculata*, rosy salmon with white stripes; *Thomas Lohb*, pink-spotted tube, dark violet belt, margin blue; *Georgiana*, freckled; *Princess Alice*, reddish tube with spotted base, and crimson belt. From your description we should say the Rose is *Souvenir de Malmaison*. The Fern is *Pteris cretica albe-lineata*.

CINERARIA POTTINO (*C. W.*).—In potting it is not desirable to give large shifts, but to proceed gradually, and pot frequently. You may, however, place an established sucker in its blooming pot at once without giving two, three, or more shifts. We have tried both methods, and obtain the best plants from increasing the pot room as soon as the roots

become slightly matted round the sides of the pot. The same remarks apply to *Chrysanthemums*.

SOVING PEAS IN SMALL POTS (*A Constant Reader*).—Half a dozen Peas will be sufficient to put in a 60-sized pot. The heat must be very mild, and they should be kept near the glass, and be well hardened-off before planting out. You may sow three or four more Peas of *Tom Thumb* in a pot than of *Dickson's First and Best*. You may turn the plants out in the open ground when well hardened-off, so as to make a good row. A quart of *Dickson's First and Best* Peas will sow a row 33 yards long; a quart of *Tom Thumb*, 20 yards.

PEACH PRUNING (*Idem*).—You will find full directions in the book you name for the future management of the spurs. They will admit of the alternate shoot-cutting.

CHARCOAL (*H. C. J.*).—It may be used with advantage in the compost for all descriptions of greenhouse plants. It would benefit *Bignonia radicans*. Charcoal, however, is chiefly used in composts that have a tendency to become close, and especially for subjects having very delicate fibres, as *New Holland* plants and the generality of hardwooded plants.

PAUNING AYRSHIRE ROSES (*Kate*).—You may peg down the shoots now, cutting clean out any weak shoots, and the old if any, and limit pruning to merely taking off the ends of the shoots, for the less these Roses are pruned the better they bloom. Only the old wood and the very weak growths should be removed.

PLANTS IN AN OUT-DOOR FERNERY (*Idem*).—We would advise your leaving well alone. No plants whatever look well in a well-arranged and flourishing fernery. We have tried it, and find the plants introduced have an anything but pleasing effect. Nothing can add to the beauty of the graceful and delicate forms of the Ferns. The plan you propose for protecting the Ferns from frost will answer admirably, only make the protection strong to withstand wind. You could not employ anything better than tiffany.

MANURING ROSES WITH GUANO (*Idem*).—There is no advantage in applying so many kinds of manure at once; one sort will be quite sufficient. A sprinkling of guano round each tree in April and again in July, so as to make the surface yellow, stirring the ground lightly with a fork, will be sufficient. Bone dust is excellent for Roses. A couple of good handfuls may be scattered around each tree and neatly pointed-in with a fork. It may be applied now, and you may then give a dressing of guano during moist weather in May. Wood ashes may be applied in the same manner as bone dust, and probably a dealer in artificial manures would supply them to you.

SOUTH AUSTRALIAN SEEDS (*A Learner*).—Sandy loam, or loam and a little peat, will grow the *Mimosas*, or *Wattles*, from Australia, and a greenhouse or conservatory will suit them. From what you say we suspect you have some of the strong-growing *Acacias*, and they will require much room to do them justice.

THINNING FRUIT OF POT TREES (*Idem*).—You do not state the size of the Peach and other trees in 11-inch pots; but on an average you had better not take more than from twelve to eighteen fruit from them if you wish the fruit to be good. See what was said in "Doings of the Last Week" lately, and any specific information we shall be glad to supply. If in an orchard house, keep them as late in blooming as you can, and beware that the soil does not become too dry, or the blossoms may drop. Make sure that there is no stoppage to drainage, or the plants will suffer from stagnant moisture.

RAISING PLANTS FROM SEED IN BOXES (*D. Ryan*).—We think you will obtain the greater part of the desired information in "Window Gardening," which you have ordered. We do not think you will do much good in the back yard enclosed by walls and houses, and the space so small; but to give you a chance of succeeding, you should raise your plants in pots in your box that faces the south, and when tolerably well established plant them out in the yard. *Mignonette* and *Stocks* would do as well as anything, with *Nasturtiums* to climb up the wall. For your front box few plants would beat *Mignonette* and *Stocks*, and a fine display would be made with *Nemophila*, and *Nasturtiums* hanging over the sides, and *Canary plants* (*Tropaeolum canariense*) climbing up by the sides of the window; we would prefer it mingled with twining *Convolvulus* outside instead of inside the windows. You could have all these earlier by sowing in pots next month, and placing them in your box and covering with a square or two of glass. We do not approve of your proposed soil—that taken from an old shrubbery, an equal part of horse stable dung, and a third part of sawdust steeped in urine. We would not much like the sawdust, but would not dislike it so much if previously heated and decomposed with the dung. In all towns old shrubbery soil is the worst for such boxes; and we are sorry to say that the soil supplied from nurseries, which you say is so expensive, is very frequently not much better, being a mixture of old composts that have done work previously. To all amateurs who can by any means manage to do so, we advise obtaining a barrowful of soil from the sides of a highway, if nowhere else. If your boxes are shallow, say 7 or 8 inches deep, we would use but little of your prepared compost. If a foot or more in depth, and you turn the mixture over several times before using it, then you may fill the boxes one-half full, and procure better soil for the remainder. If you have a kitchen garden, or a flower plot that has been dug up roughly or ridged during the winter, then scraping-off as much from the surface in a dry sunny day as would do, would answer admirably; very likely better than what you could purchase. You had better have a few holes in the bottom of the boxes for drainage. Your sandstone over them will do very well, and so would oyster shells. A little moss over all would do well, and so would half an inch or an inch of chopped straw or litter before you place the soil in.

LIME RUBBISH (*J. Anderson*).—We should spread the mortar and plaster rubbish, after reducing it to powder, over the surface of the black loamy soil and dig it in.

NAMES OF PLANTS (*T. A. Allen*).—It is quite impossible for us to name plants from their seeds. (*H. T.*).—1, *Cornus mas*; 2, *Daphne mezereum*; 3, *Dentzia gracilis*; 4, *Heliotropium peruvianum* (garden variety); 5, *Jasminum nudiflorum*. (*A Constant Reader*).—Both specimens are varieties of *Selaginella Braunii*. (*A. H.*).—*Lenicera fruticosa* (?). (*A. B. C.*).—*Notholaena squamata*. (*W. M.*).—1, *Chilanthus farinosa*; 2, *Adiantum pubescens*; 3, *Pteris argyrea*; 4, *Asplenium marinum*; 5, *Pteris cretica*; 6, *Nephrodium molle*. (*Kate*).—*Pteris arguta*. (*H. Barton*).—*Iresine Herbistii*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending February 25th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. 19	29.914	29.509	47	30	41	41	N.W.	.00	Fine; overcast; dark and cloudy.
Thurs. 20	30.076	29.937	50	40	41	41	S.W.	.12	Clear and fine; fine bright sunshine; cloudy, rain.
Fri. 21	29.903	29.835	55	42	45	42	N.W.	.00	Overcast and mild; fine and clear; fine, boisterous.
Sat. 22	29.733	29.690	54	35	46	42	N.W.	.00	Overcast, brisk wind; fine, slightly overcast; boisterous.
Sun. 23	31.261	29.856	49	39	45	43	S.W.	.00	Boisterous, fine; clear and fine; fine at night.
Mon. 24	30.153	30.135	56	45	45	43	S.W.	.00	Slightly overcast; overcast; fine, brisk wind.
Tues. 25	30.285	30.194	62	38	48	43	W.	.00	Overcast, fine; clear and fine; overcast.
Mean	30.046	29.879	53.29	37.14	45.20	42.09	..	0.12	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

LIGHT AND DARK BRAHMA POOTRAS.

ALLOW me to offer a few remarks upon the criticisms on Light Brahmas, by our too-severe friends, "Y. B. A. Z.," and "Nemo," and which, if not replied to, would lead readers not well acquainted with this variety to think it, as "Y. B. A. Z.," says, a "degenerate" and unworthy race, and one which is most difficult to breed true to its characteristics, and rarely to be seen perfect. I wish to convince your readers there is no truth in the former assertion, and, as the last Birmingham Show proved, equally little truth in the latter notion. From the lengthened acquaintance I have had with Brahmas, and the share of success obtained since I have exhibited them, more particularly the Light, your readers will, doubtless, prefer the results of my experience to those of persons who have either not properly understood the breed, and, as a matter of course, have not been successful with it, or else with whom individual preference for the other colour overrules more mature considerations.

Your readers must first understand that more than one strain came into this country at or about the same time, and that our French neighbours received them also. Of these strains, Burnham's, the first sent to Her Majesty, seemed identical with that of Dr. Bennett—viz., of a "creamy tinge." That of Mr. Garbanatti, alluded to by "Y. B. A. Z.," was similar to the French strain, of a bluish white tinge, either much spotted about the rump and thighs, or streaked about the back; and Dr. Gwynne's (I believe Miss Watts and Mr. Tegetmeier had the same) of a French or bluish white, quite clear, and much the best in surface colour. The result of these different colours is much improvement in the present style of these fowls, for what was wanting in the shape of Dr. Gwynne's has been rectified by the Garbanatti and French birds, and the buff defective colouring of Burnham's, or Dr. Bennett's, has been rectified by the French also. Still these did not produce perfect birds; for the French and Garbanatti's had black tails, not in the slightest degree fringed with white, which they should be, and Dr. Bennett's had the defect of being too white down to the skin. The Americans of the present day breed them almost totally distinct, the head and face being quite different from our grouse-shaped head, having but small heads, and scarcely any wattle, good-shaped bodies, beautiful neck hackles, and fairly feathered legs. Thus we have quite as great a field for discussion upon colour in Light Brahmas as in the Dark. As the result of my experience, I predict that Light Brahmas with the surface colour of a pure clear bluish white, free from spots or streaks, will be the colour to stand its ground in the exhibition, and the ground colour for such must necessarily be grey. From thus considering the subject of colour, as a matter of necessity, in my opinion, we treat the variety as birds of colour, which "Y. B. A. Z." does not approve of, but I am compelled to think all exhibition fowls are judged by colour, and the more so the better.

Your readers will, doubtless, see a singular anomaly in "Nemo's" remarks, as applied to some one, and the staring fact of the winning pens having the dark grey ground and the blue white surface colour belonging to some said person who discards the before-mentioned colours. This is easy of explanation. "Nemo" evidently wrote without his notes, and his memory did not help him. From my own notes of the late Birmingham Show, I observe the following:—"COCKS.—First prize and cup, Mr. Dowsett's (not Mr. Pares's as 'Nemo'

observes). A good frame, coming three-year-old bird; of good colour, surface and ground; fairish neck hackle; not a good shape. COCKERELS.—First, second, and third, Mr. Pares. First prize, good shape, bad surface colour, being very much spotted, particularly on the thighs, and too clean-legged." When "Nemo" spoke of the remarks upon the colour of this cock, he should bear in mind when scanning the colour of the Dark, if they are too light, brown tinged, or badly marked, we quickly say they are a bad colour. The same applies here to the Light cock in question, he was splendidly shown, being absolutely without a dirty stain, or in the slightest degree disturbed in feather; but as I said then, we all agreed that his surface colour was the worst in the class, and I am so much astonished at "Nemo's" defence of Mr. Teebay's judgment of that and other Light cockerels, that I must beg of him to refer to No. 802 in the prize list, and 895 in the non-prize list, and compare notes. I placed the cockerels thus, and others present agreed—Mr. Pares's third-prize bird first; Mr. Herbert's highly commended second; and Mr. Pares's first-prize third; and in the value of these, first and third, Mr. Pares agreed with me, and was much astonished when he knew which of his birds had the first prize. From Mr. Pares's knowledge of Light Brahmas, I value his opinion as much as that of any person living, and quite agree with him upon the necessity of the surface colour being white (and free from spots for exhibiting), and the ground colour grey.—F. CROOK, *Vine Cottage, Forest Hill.*

P.S.—Referring to "Nemo's" remarks, that the Dark Brahmas are generally superior to the Light Brahmas, I shall have no objection to show twelve Light Brahma hens against any one person's twelve Dark Brahma hens for a fair amount, age and perfection of colouring and markings to be amongst the chief points in deciding. I omitted to mention before, that I was so far pleased with the first-prize Light cockerel, that I was anxious to become the purchaser of him, but Mr. Pares did not at that time feel inclined to part with him.—F. C.

In reply to "BENGAL," I regret to say I was not at Birmingham, and therefore have no means of judging, but I have seen within the last few months well-filled Light classes, as to numbers, but the quality with exceptional pens wretched. "Nemo" has in his letter explained the probable reason for this degeneration. I must, however, again repeat, and I do it with all the force that may yet attach to the title "WILTSHIRE RECTOR" first gave me, that of "Criticiser of Schedules," that the Light Brahma breeders in asking for a separate cup to both breeds, are asking that which they will never obtain except at a show with a strong Light Brahma bias. I mean, of course, as the gift of the Society; and supposing the petition granted, all the other varieties would expect equal favour. Brahma breeders have every reason to be satisfied with the position we have obtained for our pets. We have the two classes at most shows, and a single cock class; in fact, Brahmas, as a rule, receive now as fair treatment at the hands of schedule-framers, as they have any right to expect. Birmingham, perhaps, ought to offer them more money, still I repeat that generally they have fair treatment. I will give the Light Brahma breeders every credit, they have themselves very liberally made extra prizes for their favourites. This, I dare say, they will continue to do, and I for one shall be pleased to see a really better pen of Light birds winning the cup from the Dark.

I may here just explain an error in my former note on this subject. I said the Dark beat the Light birds amongst other points in length of leg. I should have said in shortness. This is most manifest to any unprejudiced person.

Thus far I had written, intending to quit a subject on which I feel all sides will never agree, when before breakfast this

morning I managed to devour, without preventing the digestion of that meal, Mr. Pares's reply. I have no objection to Mr. Pares's lance, especially with the courteous "button" that sheaths the point, neither with my lance have I any desire to unhorse the Light Brahmas. Before I can do this, they must get on horseback, or, in other words, win a cup; and if I am there to see, and they do not deserve it, well, then, lance in rest, "I'm in," as poor Artemus Ward would have said.

What I said in my former letter referred only to a cup offered to the best of the two breeds. I quite agree with the admirers of the Light birds, that they deserve equal money prizes with their darker brethren. The entries are nearly equal at the general run of shows, Birmingham, however, being markedly an exception; still the entries deserve equal prizes. Mr. Pares will, I think, bear me out, that I have often in these pages advocated the same prizes to be given to all classes, as secretaries can never tell which breed will pay best. This was not, I think, the point at issue, but the fact that the cups were always awarded to the Dark. Geese and Ducks are two different breeds; Dark and Light Brahmas two varieties of the same breed. It would be just in the former case to award a cup to the best specimens of their breed, whether Geese or Ducks; but when it is offered to the best pen amongst several varieties of the same breed, then, other points being equal, surely it ought to be awarded to the pen showing the best general characteristics of the breed—for instance, in Brahmas, size, depth of chest, breadth, shortness of leg, heaviness of leg-feathering and fluff, comb, &c. All these points ought to be as good in the Light birds as in the Dark. Mr. Pares, Mr. Worthington, Mr. Crook, and others, must forgive me, but in all these points, the distinctive points, in fact, that mark a good Brahma, whether Light or Dark, the latter appear to me by far the better. Supposing these points equal in two pens, then the decision would hinge on the best-coloured birds, and then the characteristics of each variety, as to colour, &c., would turn the scale.

Mr. Pares seems to consider he has quite unhorsed me by the "blue" and "green" idea; as it was always allowable for the unhorsed champion, who, possibly like "Y. B. A. Z.," did not know when he was beaten, to renew the battle on foot, so I reply "Blue" and "green" are but qualities of a certain something. Suppose it cloth, then if the material were equally good, the choice hangs on the colour according to the fancy; but if the material were faulty in one, as I contend the material is faulty in the great bulk of Light Brahmas, then it is the Light Brahmas who are "out of court," and not "Y. B. A. Z."

Light Brahmas were, I believe, the variety that first appeared in this country, but if I have understood Mr. H. Lacy correctly, he had long before kept Dark Brahmas in America, and, therefore, the Dorking parentage falls to the ground. Shall I say that I am disposed to believe that the Brahma in true characteristics of the breed cannot be improved by the Dorking for Dark birds, any more than by the White Cochin for Light?—Y. B. A. Z.

EXCESSIVE RAILWAY CHARGES.

I THINK I can throw some light on the reason why fowls are charged so much more on the return journey from shows than when going.

At Bristol Show, in January, 1867, I was charged 8s. more for my fowls returning than going. I remonstrated, and was told it was the carriage from the Show to the station. Calculated on the number of pens shown, this was £10 or £50 nett to the Great Western Railway. At Weston I am charged 5s. 3d. from the Show to the station, by the Secretary of the Show. This is £30 clear profit to some one out of the pockets of exhibitors.—BRAHMA.

WHEN at the Newport Show in December last I claimed a pen of Cerve-Cour fowls, which were forwarded per London and North-Western Railway in due course. On the arrival of the parcel I found the charges so excessive that I refused to pay them. The weight was 36 lbs., and was charged 7s. 6d. from Newport to Leeds; and from Leeds to Pudsey by Great Northern Railway 10d., the proper charge. The Great Northern Company had "paid on" the 7s. 6d., and demanded the total, 8s. 4d., from me, and the dispute still exists.

A friend of mine at Newport made the necessary inquiries for me, and sent me the reply of the London and North-Western Company, which stated the charge from Newport to Leeds for a hamper of five fowls weighing 36 lbs. to be 3s. 3d.; and I

also sent to that Company's offices at Leeds, put the same question, and have their reply, stating the charge to be 3s. 9d., so that according to their own statements I am asked double the proper rate.

I am told by the Great Northern Company's servants here that my proper course is to pay them and sue the London and North-Western Company for the difference—a course which I feel reluctant to pursue, though I am determined to make a stand in this case, it being the largest amount of four hampers which are similarly charged, and all occurring in the same month, three of them being in the hands of the Midland Company from the Birmingham Show to Leeds.

I believe from what I have seen, that most of these heavy charges are caused by the gross carelessness of the officials in neglecting to examine their scales of charges when booking parcels; and unless determination be shown by those receiving poultry by rail not to be overcharged, we shall look in vain for any reform in this respect.

For the benefit of myself and many I know to be often in the same difficulty, I should feel it a favour if you will kindly say whether it be more advisable for me to pay the whole, and sue the London and North-Western Company, or to refuse to pay till the account be corrected?—E. HUTTON, *Pudsey*.

[Were we similarly treated we should refuse to receive the birds, unless the railway officials agreed that if we did receive the birds it should be without prejudice to our resisting payment of the excessive charges. As your case stands we should refuse payment to the Great Northern, and then, if the Company sued you in the County Court and recovered (which we doubt), you might sue the London and North-Western for the overcharge. You had better consult a solicitor.]

THE HOUDAN'S FIFTH TOE.

ALL poultry fanciers should thank you for your answer to a correspondent in your issue of the 13th inst., headed "Points of Houdans."

The only points in which "improvers" suggest "improvements" in Houdans are—1, By getting rid of the fifth toe, which predisposes to lameness; 2, To obtain hardier birds. To this I answer—1, Of the many hundreds of Houdans I have had and bred, I have never had a case of lameness; 2, Houdans are very hardy and bear confinement wonderfully, and I do not believe there is any cross that could make them harder. Why, then, strive to obtain "crosses and nondescripts, the drafts and refuse of yards," when the pure stock is so good?—SANGRE AZUL.

ROUP AND CANKER IN PIGEONS.

I HAVE been much interested in the various correspondence that has lately appeared in your columns relating to Pigeons, and think much credit is due to Mr. J. Huie for his able critique on Mr. Tegetmeier's "Pigeons;" also for his remarks on the supposed contagious diseases of roup and canker.

So far as my experience goes I have never found roup to be infectious, but cannot say the same regarding canker. Last season I lost several feeders through this malady; and as my birds are kept scrupulously clean, I am inclined to attribute its origin to the fighting of some of the cocks, one of which was affected with canker. I may mention that I found a strong solution of alum very efficacious.

The fancy now stand in need of a practical work on Pigeons, as publications similar to Mr. Tegetmeier's have no weight with fanciers. I would propose that some of our leading fanciers favour us with an occasional article in your columns on the different varieties of fancy Pigeons, and thereby elicit the opinions of others. By so doing I think we are likely to obtain much useful information, and a volume so compiled would, I am sure, be most acceptable to every class of Pigeon-keeper. Perhaps the members of the Columbarian Society will favour your readers with articles on the subject, and by so doing will greatly advance the objects of the Society.—AMATEUR.

DUBLIN POULTRY SHOW.—As this is to be an Irish Session in Parliament, may I hope the same attention may be drawn to Irish Poultry Shows in your Journal, to notice the forthcoming Dublin Society's Show? The poultry department is divided into classes for Dorkings (Silver Grey and Coloured), Spanish, Game, Brahma Pootra, Cochin-China, La Fleche, Houdan,

Crève-Cœurs, and Hamburgs (Spangled and Pencilled), with prizes of £2 and £1. Turkeys, Geese, Rouen and Aylesbury Ducks have each three prizes allotted to them, varying in value from £3 to 10s. There are eight classes for single cocks. Unfortunately no efforts hitherto of exhibitors have been successful in inducing the Society to add a variety class, and also one for Bantams. The objectionable rule of requiring exhibitors to pen their birds, will, I fear, prevent distant exhibitors competing; otherwise I see no reason why this should fall behind the late excellent Shows at Limerick and Cork, where the care and attention bestowed on the birds, as well as the general good management, must be appreciated by all exhibitors, among whom is included—**EBLANA.**

CUP AND PRIZE GAME FOWLS—SORTS AND COLOURS.—No. 3.

3. **PILE OR PIED.**—*Cock*.—General colour a bright red piled on a white ground. Beak light. Comb, face, gills, and deaf-ears, bright red. Head bright red. Neck-hackle chiefly red with white streaks, but white underneath. Back bright red, a little pied with white. Shoulders and the upper wing bright red. Lower wing chiefly white. Breast well marbled with red on a white ground, as better than all white. Thighs chiefly white, a little red. Tail white with red feathers at the base. Legs, feet, claws, and nails, white or whitish; yellow legs come next, and yellowish willow legs third. The reddest and brightest red Piles are the best birds as a rule. As to the eyes of Pile Game they must invariably be bright red, as yellow and all other colours of eyes are very inferior, as are dull-coloured birds.

Hen.—General colour white thickly veined and streaked with bright red all over, the tail included. Breast also veined with bright red. The other points to match the cock.

4. **DUCKWINGS.**—*Cock*.—General colour either birchen grey, yellow birchen, or silver grey. Comb, face, gills, and deaf-ears all bright red. Eyes red for cup birds. Neck-hackle the same as the general colour, striped with black stripes underneath. Back the same as general colour, or coppery. Upper wing the same as back. Lower wing cream colour. Blackish butts. Wing with steel-blue bar. Breast dark bluish black. Tail dark greenish black. Legs, feet, and nails, willow for cup birds.

Hen.—General colour a bluish grey thickly frosted with silver all over. Neck-hackle silvery striped with black. Breast a pale or silvery fawn colour. Thighs the same. Tail of a dark greyish black. The rest to match the cock. Red fawn breasts look coarse for these hens. Birchen Greys, willow legs or olive. Yellow Birchens, yellow legs, yellow eyes. Silver Greys, white or blue legs if pure.

5. **BLACK.**—These have taken a few cups; they should have large, bold, full black eyes, and blackish beaks. Legs bluish black, very dark. *Cocks* either brassy-winged or all black. *Hens* entirely black. Red combs are preferred, but gipsy combs are as good. The blacker the legs and beaks are the better. Olive-green legs are bad. The nails should always be blackish.

6. **DARK GREY (Dark combs).**—These should be cup birds, being the very gamest sort of all, but being classed with Duckwings at exhibitions are not enough noticed by judges, and are not common, Duckwings being greater favourites, though not with the cockers. Hens should be much darker above than the cocks, though not so under the feathers. The eyes, large, bold, and full, and jet black. Black legs, feet, beaks, and nails. Dark Birchens much the same, though not so game. General colour in cocks dark silver grey or birchen grey. In Birchen cocks, dark birchen. The hens dark blackish grey, in the Greys, and as dark with birchen hackles in Birchens.

7. **WHITES** sometimes take prizes before the Piles, and should be entirely white with no yellow tinge. Bright red eyes and white legs, feet, and nails are essential. Yellow and willow legs and yellow eyes are inferior, usually being accompanied by a yellow tinge in the plumage.—**NEWMARKET.**

WAVERLEY POULTRY SHOW.

This Exhibition was held on the 19th and 20th inst., in the Corn Exchange, Melrose. It is only a year ago since it was established, and on the first occasion there were about 250 entries. Whether or not it be due to the historical associations connected with the place, or to the fancy for domesticated fowls which prevails in the district, we know not, but this year the entries were nearly doubled, there being about

450 pens. But it was not the numbers so much as the excellence and variety of the fowls which commanded the attention of visitors. We think there have been few better exhibitions in Scotland than that at Melrose, although, in other years, it would be advisable to divide the old from the young classes.

There was a splendid display of *Pigeons*, the best we have seen out of Birmingham; and the exhibition of *Canaries*, although not the best that has taken place in Scotland, was at least highly creditable to an institution of such recent origin as the Waverley Poultry Association. —(*Scotsman*.)

The following is the list of awards:—

DORKINGS.—First, J. White, Warlaby (Grey). Second, Lord Binning, Mellerstain. Third, A. Cudde, Melrose (Silver). Highly Commended, Duke of Buccleuch (Silver); D. Hardie, Sorlie, Ewes, Langholm (Dark); D. Gellatly, Meikle. Commended, D. Hardie (Silver); R. Reed, Longtown, Cumberland (Coloured); Lady G. Montgomery, Stobo Castle, Peebles (Silver).

SPANISH.—First, H. Eddon, Goitstock. Second, W. Veitch, Dingleton. Very Highly Commended, A. Redpath, Edinburgh. Highly Commended, J. H. Wilson, St. Bee's; J. Taylor.

COCHIN-CHINA.—First, Gunson & Jefferson, Whitehaven. Second, J. Elgar, Osmanthorpe Hall.

BRAMA POOTRA.—First, J. Shorthose, Newcastle-on-Tyne. Second, J. A. Dempster, Stirling. Highly Commended, G. H. Plummer, Dalkeith; J. Shorthose. Commended, Marchioness of Queensberry, Kilmount; Miss Aglionby; W. R. Park; J. Anderson, Meikle.

GAME.—First, J. H. Wilson. Second, H. M. Julian, Hull. Highly Commended, Mrs. Turnbull, Jedburgh (Black Red); W. Urquhart, Langholm; J. McGregor, Crief. Commended, Miss Aglionby; A. Robinson, Longtown.

HAMBURGH (Golden-pencilled).—First and Second, H. Eddon. Highly Commended, W. R. Park.

HAMBURGH (Golden-spangled).—First, A. Hatelie, Selkirk. Second, S. & R. Ashton, Mottram. Highly Commended, Mrs. Brown, Abercainry, Crief; S. Burn, Whithy.

HAMBURGH (Silver-pencilled).—First and Second, H. Eddon. Highly Commended, W. R. Park.

HAMBURGH (Silver-spangled).—First and Second, H. Eddon. Highly Commended, Bowman & Fearon, Whitehaven; W. R. Park.

ANY OTHER VARIETY.—First and Second, H. Eddon. Third, D. Gellatly (Padue Chamois). Highly Commended, Hon. Miss E. de Flahault (Crève-Cœur); Gunson & Jefferson; W. R. Park (Crève-Cœur). Commended, J. Elgar (Crève-Cœur).

GAME BANTAM.—First, W. Scott, Jedburgh (Black Red). Second, W. Mabon (Duckwing). Highly Commended, W. Mabon, Jedburgh (Brown Red); W. Easton, Jedburgh (Black Red); J. Hervey, Jedburgh (Brown Red); J. Wood, Chorley (Duckwing). Commended, Hon. Miss E. de Flahault (Black Red); J. Hervey (Black Red).

BANTAMS (Any other variety).—First, W. L. Graham, Melrose (Black). Second, H. Eddon. Very Highly Commended, J. Hood, Lintalce, Jedburgh (Golden Sebright); T. C. Harrison, Hull; S. & R. Ashton (Black); Lord Binning (Gold-laced); T. Watson, Crief (Golden Sebright).

BANTAM COCK.—First, Bowman & Fearon (Game). Second, W. Scott, (Black Red). Commended, R. Paterson, Melrose.

DUCKS (Aylesbury).—First, Bowman & Fearon. Second, Lady G. Montgomery. Very Highly Commended, D. Hardie. Highly Commended, D. Hardie; Lord Binning; J. A. S. E. Fair, Jedburgh; J. Scott, Newhall. Commended, G. Dryden, Selkirk.

DUCKS (Rouen).—First, Gunson & Jefferson. Second, D. Hardie. Highly Commended, D. Hardie.

DUCKS (Any other variety).—First and Second, T. C. Harrison, Hull (Carolinian and Pintail). Highly Commended, Hon. Miss E. de Flahault (White Gull); H. Eddon; S. & R. Ashton (Carolinian); S. Burn (Black East Indian). Commended, A. Thomson, Maithill (Muscovy).

SPILLING CLASS.—First, H. Eddon. Second, D. Hardie (Dorking). Third, W. R. Park (Silver-spangled Hamburgs). Highly Commended, W. R. Park (Golden-pencilled); J. A. S. E. Fair (Aylesbury Ducks). Commended, Miss Aglionby (Pile Game Bantam); T. L. Jackson (Dorkings); J. Sword, Jedburgh.

COTTAGERS' PRIZE.—First, W. Hart, Melrose (Brahma Pootra). Second, D. Waugh, Melrose (Spanish). Third, W. Miller, Selkirk. Highly Commended, L. Thompson (Golden-spangled Hamburgs).

TURKEYS.—First, Lord Binning (Cambridge). Second, Miss Porthwick, Flimby, Maryport (Cambridge). Highly Commended, T. L. Jackson; J. Elgar.

GESE.—First, Mrs. Birkett, Droom Rigg, Ainstable (Toulouse). Second, W. Paterson, Langholm (White). Highly Commended, Duke of Encleuch, Dalkeith.

PIGEONS.

PASTAILS.—First, J. Thompson, Bingley. Second, H. Yardley, Birmingham. Highly Commended, W. R. Park; R. B. Chouler; J. Hawley, Bingley, Leeds; A. Smith, Broughty Ferry; J. Grant, Corstorphine, Edinburgh. Commended J. Spence, Musselburgh.

POUTERS.—First, J. Hawley. Second, J. Grant. Highly Commended, H. Eddon; H. Yardley; J. Grant; J. Towerson, Egremont. Commended, W. Martin, Ayrton.

NCNS.—First, R. Paterson, Melrose. Second, J. Thompson. Highly Commended, R. Davidson, Swinnie, Jedburgh; H. Yardley. Commended, W. R. Park.

JACOBS.—First, H. Eddon. Second, J. Thompson. Highly Commended, Hon. Miss E. de Flahault; J. Hawley; J. Thompson; G. Yule. Commended, J. Spence.

TURBITS.—First, J. Waddell, Carnwarth. Second, J. Thompson. Highly Commended, R. Paterson, Melrose; W. R. Park; J. Towerson. Commended, R. B. Chouler.

OWLS.—First, H. Yardley. Second, J. Towerson. Highly Commended, R. Paterson; H. Eddon; J. Thompson.

TRAILERS.—First, J. Baillie, Bellevue, Aberdeen. Second, R. Whitaker, Delph Hill. Highly Commended, J. Hawley; H. Eddon; H. Yardley.

ANY OTHER VARIETY.—First and Second, J. Hawley. Highly Commended, A. Goodfellow, jun., Jedburgh (Victorian); Hon. Miss E. de Flahault (Runts); H. Eddon; J. Campbell (Marpies); J. Thompson; P. A. Renwick, Kelso (Barbs); H. Yardley; J. Baillie; J. Towerson.

SELLING CLASS.—First, J. Hawley. Second, J. Thompson. Highly Commended, J. Spence (Fantails); P. A. Renwick (Turbits); H. Yardley. Commended, J. Hawley; H. Beldon; J. Thomson.

CANARIES.

DON (Yellow or Buff).—Cocks.—First, W. Boggie, Priory. Second, J. Kemp, Galashiels. Commended, J. Dodds, Weirhill, Melrose. *Hens*.—First, W. Tiffin (Yellow). Second, W. Boggie (Buff). Commended, J. Kemp (Buff); W. Fairbairn, Joppa (Yellow).

YELLOW, BUFF, OR FLECKED.—Cocks.—First, J. Cleghorn, Galashiels (Flecked). Second, W. Balmer, Hawick (Buff Flecked). Highly Commended, J. Kemp, Galashiels (Buff Flecked). *Hens*.—First, W. Balmer (Yellow). Second, J. Kemp (Buff Flecked). Highly Commended, J. Renwick, Melrose (Yellow Flecked).

CAGE BIRDS (Canaries Excepted).—First, Miss Paterson, Melrose (Goldfinch). Second, W. Hart (Goldfinch Mule). Third, W. Balmer (Goldfinch).

The Judges were Mr. Teebay, Fulwood, Preston; and Mr. John Young, Hawick.

TUMBLER PIGEONS.

HAVING for some time past seen notices about Ground or House Tumbler Pigeons, and their modes of turning, I last summer procured a pair from the widow of the late Mr. B. P. Brent. Mrs. Brent was most anxious to send me good birds, and took much trouble to select the best she could spare at the time. The hen is not very different in appearance from an ordinary Black Tumbler Pigeon of small size. The cock bird has large, one might almost say clumsy wings, and a large, heavy head; the neck leaving the skull more in the line of the beak than in other varieties of Pigeons, and it may be that the form of the brain gives rise to this most singular power of tumbling close to the ground, for it certainly does not arise from disease. In some cases it amounts to a defect, for a Pigeon tumbling so much as the old cock does, could not live without protection. The hen seldom tumbles in the aviary; but if the cock is forced to fly, he rarely rises a foot from the ground without turning over on his back, and apparently hitting the crown of his head on the floor.

These birds breed well, but the nest is made on the ground, as they cannot or will not rise to a shelf only 18 inches above it. Two pairs of their young were allowed to fly at large, and all did well for some months, one pair being still at liberty. They all flew well, rising high in the air, and tumbling most dexterously. After a time the older pair were helplessly attacked with tumbling fits, and often lost all control over their own movements, and were therefore shut up.

Wind appears to excite all Tumblers to roll, whether Air or House kinds, and the cleverest feats are generally performed against the wind. On a breezy afternoon last autumn, I saw a House Tumbler on one of the walks at some distance from the house, and thinking it had rolled to the ground, I started it to send it home. It rose a few yards, and then rolled tail over head to the ground. It was raised a second time, and got higher, but when it felt the wind above the trees it rolled again and alighted in a maple tree. When driven off the tree it did its best to reach its home, but was again attacked by a fit of tumbling and rolled away down over the lower lands where I lost sight of it, and it was not seen till the next day, looking somewhat the worse for its adventure, but was soon well again.

I find that when these birds roll to the ground they must not be started at once, but left to themselves, when they are more likely to calm down, and then they often fly well, and like ordinary Pigeons. I therefore conclude that the rolling arises from a nervous affection, which differs very much in different birds of this breed.

I mentioned the effect of wind on these birds in causing them to tumble to such an extent as to make them so far powerless for the time; but the effect is still greater with wind and snow together. During an east wind, with a little snow, I found a young cock, a healthy strong bird, standing on the snow in an open part of the ground, where he had remained nearly all day, and in the afternoon I tried to make him fly home, but his motions were most singular and erratic, and he got still further from where he wished to fly to, and after several trials he rolled with some force into a thick holly bush, where I secured him. Since being shut up his powers of tumbling have increased, and he now makes a very complete wheel on rising only a foot from the ground, yet possesses strong powers of flight, and is unusually perfect in plumage, and very healthy.

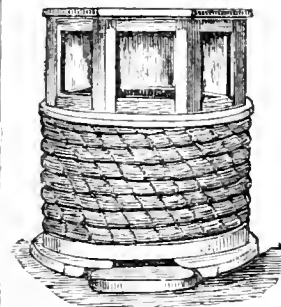
Such an affliction as this excess of tumbling could only continue in a race of domestic birds well cared for, as one roll to the ground in sight of a cat would be the last one. Yet the Hawk does not appear to take advantage of the weakness. A

hen Sparrowhawk used to pass over the place twice daily; her approach was known by the Starlings and Pigeons rising in the air, but I have never known her strike a Pigeon, although I have often seen her pass a flock of Tumblers, and take a Sparrow beyond them. I fear a cat would not be so considerate to the Pigeons, nor would the Hawk, if she saw that the tumbling arose from disease or a defective power of wing, for she more than once did her best to strangle my poor pinioned Peeseweeps running in the garden.—A. J. A.

IMPROVED COTTAGE HIVE.

We have not used the hive, but the best answer we can give to our correspondent is to extract what Mr. S. Devan Fox states in a contemporary Journal.

"Mr. Taylor, in some of the later editions of his 'Bee-keepers'



Mannual,' gives a description of a flat wooden-topped straw hive, which I have found, after many years' trial, to be one of the simplest, and at the same time one of the most remunerative hives I have ever possessed.

"I have made some alterations in the dimensions and mode of construction, but the main features of the hive are taken from Mr. Taylor. There are three cone-shaped holes for communication with supers; they may be covered with simple blocks of wood on a plain surface, or slides made of zinc may be adopted.

"The chief advantage of the pointed aperture is, that when the slides are pushed in from the outside, the bees are gradually urged out of the way; the risk of crushing the bees being thus reduced to a minimum, as certainly not more than one bee can be injured. These three apertures are intended for communication only with one super, whether of glass, straw, or wood, although, if preferred, three can be worked at once; but this is a plan I cannot recommend when large supplies of honey are desired."

We know that it is manufactured by Mr. Lee, Windlesham, Surrey, and probably by Messrs. Neighbour, and Mr. Pettit.

STRANGE PHENOMENON IN THE BEE.

THE bee, though generally supposed to be almost dormant in winter, has the peculiarity of sounding at twelve o'clock at night on the 6th of January. A single bee appears to give the signal, sometimes one, sometimes two, and I have even heard three distinct sounds as signals; then a sort of melancholy harmonious sound is emitted by the whole hive, and continued for a minute or two, however frosty the night may be. This year I had eight hives watched, in two gardens two each, and four in another; the gardens about 200 yards from each other. The first hive sounded at seven minutes to twelve o'clock, and the last at twelve o'clock by gun time, all the eight hives having sounded in the interval. How the little insect marks that minute of time once a year is certainly a poser for the scientific class.—GEORGE WILSON, *Whalton*.

[It is essential to the very existence of bees that the temperature of the cluster shall not fall below a given point, and as they are only able to evolve heat by increased activity of their respiratory organs, it follows that whenever the interior of their dwelling becomes too cold for them, quickened breathing, producing a "melancholy harmonious sound," is the necessary consequence. This is, perhaps, more likely to occur about twelve o'clock during a January night than at any other time, and is probably the true explanation of the supposed phenomenon.]

PRICE OF LIGURIAN BEES, AND OF FRAME HIVES.

So many applications reach me, both in my own name and under the *non de plume* of "A DEVONSHIRE BEE-KEEPER," with regard to the prices of Ligurian bees, and the cost of frame hives, that I am induced to state that my price for healthy stocks, including frame hive of the best description, is four guineas, or persons sending their own "Woodbury" hives may have them furnished with bees, combs, and frames, for £3 5s. Swarms during May and June, two guineas and a half, after

that time two guineas, exclusive of hives. I have also made arrangements for importing queens from the best locality in the Italian Alps, which will enable me to supply them throughout the season at one guinea, and in the autumn (October), at half a guinea each. Frame hives, either in straw or wood (the former recommended), one guinea.

In all cases the purity of queens, and the safe transit of queens and bees to any part of Great Britain and Ireland, are guaranteed.—T. W. WOONBURY, *Mount Radford, Exeter.*

ARTIFICIAL SWARMING IN COMMON HIVES.

As many of your readers still keep bees in the old-fashioned straw hives, or in hives without bars, it may interest them to know that artificial swarms can be made from them without difficulty, and quite as profitably and successfully as out of the most approved bar-and-frame hives. All that it is requisite to know is how to drive bees efficiently. The mode of operating must first be mastered according to the instructions so lucidly given by "A DEVONSHIRE BEE-KEEPER" in recent numbers of "our Journal." To any one familiar with the art of driving, the further process is easy, and can rarely fail of success; in fact, I have never yet known an instance of failure with ordinary care.

My plan is to make one swarm out of two hives; and it is carried out as follows:—Let A and B represent two strong hives (strong in numbers they must be), standing side by side or far apart, it matters not which, although success will, perhaps, be the surer as they are more remote from one another. I generally prefer to make these swarms somewhat early in the year, so as to anticipate the natural issue of swarms, but not earlier than the first week in May, and later, of course, in backward seasons. Begin by driving A into an empty hive. As soon as the queen is secured with a tolerably large swarm of bees, put the driven bees on the stand lately occupied by A. Remove A to some distance, say 20 yards or so, allowing the bees to come out of it if they please. They will naturally find their way to their old stance, and remain with their queen and companions in the new hive. The next day remove B to a new stand in the busiest part of the day, and put A on the stance vacated by B. The last-mentioned hive should be permanently located at some distance; in fact, it will be advisable to have your apiary divided into two, with as much space intervening as you can conveniently allow, so as to lessen the chance of too many bees returning to their old hive. The work is now done. It only remains to see that the swarm is not starved in bad weather, which, by the way, often destroys many natural swarms, when the bees are unable to go out foraging.

The principle of this method of making artificial swarms is not original. It is that which Langstroth, the eminent American bee-master, published to the world years ago. Its merit lies in its great simplicity, which it has in common with many greater inventions.

By this plan we have the greatest chance of success with the minimum of risk. First, natural swarming is anticipated, and the grievous disappointment occasioned by the flight and escape of swarms is avoided; secondly, all excessive swarming is put a stop to; and lastly, there is the greater hope of an abundant honey harvest, for the swarm being early and strong (as it always must be by this plan), it has the whole season before it. If honey abounds, supers will soon have to be given. If, on the contrary, the season is an indifferent one, these early and strong swarms will have so much the better chance of surviving.

At the same time some attention must be paid to A and B. As the former will have to rear a new queen, there will be some chance of its sending out a swarm in the course of three weeks or so; but this will rarely happen except where a very large quantity of brood was left by the old queen when the first swarm was made. In this case the former process may be repeated, by driving a swarm out of B, locating it on B's stance, and the following day, when the population of B has been thinned, putting B in place of A, and moving A to a new stand.—B. & W.

SILKWORM-REARING IN ENGLAND.—No. 6.

The preparation and construction of materials for silkworms to spin in require the attention of every silkworm-rearer some time before the worms commence work. The method of

twisting papers thimble-form, practised in England, is all very well for the amateur with a few score worms, but would not do where hundreds of thousands have to be provided for; a more simple and expeditious way is then requisite. I shall describe three or four of the best systems, and one of recent invention by Count Delprino.

The broom system is that most commonly adopted; it is an ancient method, and answers very well when properly carried out. It consists in preparing small brooms, formed of branches and stems of various trees or plants without thorns. Half a dozen or more such stems are tied together within an inch of their bottoms, leaving the top expanded and open, or full of spaces an inch or more across. The diameter of the top or open part is about 4 inches, and that of the bottom where tied little over an inch. They can be tied with garden matting, twigs of the willow, or thin iron wire previously made pliable by being heated red hot. They must be made 6 inches higher than the distance from stage to stage, or about 2 feet, their tops being easily bent; for when stood on a stage they should be made to curve beneath the stage above them, by which means they are secured in position. At 6 inches apart about eighty, set in single rows, will fill such a stage as I have described, but if in double rows, each alternate broom being curved in opposite directions, and placed on the cross pieces at 4 inches apart, about one-third more will be required. The double row is, perhaps, to be preferred, as the worms are better distributed, having extra room to work in. On finding the foot of a broom they crawl up into the open head, and mostly to the very top, directly under the stage above, and there begin to work. The materials for forming these brooms should be thoroughly dry before use. I have found the most suitable to be the common broom found in woods and about commons, garden cress which has run to seed, twigs of oak with the leaves, or of elm, dardish and turnip tops, the stems of various woody weeds, garden flower stalks, and mixed therewith, pea straw in which the insects readily spin. Nothing of a thorny or prickly nature, or with a disagreeable odour, should be used. Into the head or centre of the brooms it is an excellent practice to place a small handful of shavings, straw, pea haulm, &c.

The above is the most simple and generally adopted system, but I find it defective, inasmuch as many worms pass between the brooms, unable to find and mount them, and thus suffer; often so losing time, wasting their silk over the leaves, and eventually spinning a cocoon with little substance. To remedy this evil my plan is to fix edge upwards across the stages laths on which to stand the brooms, making these steady by opening their bottoms to admit the laths. The silkworms go by the laths to the brooms without loss of time. The laths should be made secure in grooves formed in the inside of the side rails of the stages, and carried to within a quarter of an inch of the paper thereon. By this means they will be supported just above it, and the paper can be removed along with the dirt and excrements without disturbing the brooms.

Another system, more expeditious than making brooms, is to lay the materials across the stages, in rows about 8 inches wide at their base, and 18 inches apart, carrying them up to within 4 inches of the stage above. Then pieces of branches or sticks are laid from top to top of the rows quite up to the stage, thus making the whole steady, and forming as it were so many bridges, sufficiently high not to be disturbed or touched when feeding the worms or performing other necessary work. This method is excellent, for the worms arrive quickly at their spinning quarters, and may please themselves about remaining at the bottom or going to the top. I have found many sluggish worms which spin sometimes even among the leaves on the stages, and I particularly noticed it with the Japanese breeds, so that this system is especially adapted for them.

An excellent method also would be arranging the materials on the under part of every stage except the bottom one, and securing them by means of twine run over and laced to the cross bars before putting the silkworms' castle, or house, together—viz., to lay the stages bottom upwards on the ground; to throw over all a sprinkling of shavings or pea straw, or lath, then stems of broom, and flower stems, and over all a few oak or elm shoots, and to fix all together by lacing the twine to the ears. The materials may be about 6 inches thick in the centre, gradually diminishing to almost nothing at the sides of the stages. When the time arrives for the worms to spin, it is only necessary instead of brooms, &c., to stand up twigs or stems of plants for the worms to crawl up by to the materials already prepared. These twigs can be slit at the bottom and placed over laths as for the brooms. As the chief preparation is made

at the time the castle is put together, consequently in spring before stems of any kind are sufficiently grown, they must be procured and well dried during the previous summer or autumn.

As this method involves a difficulty with the top stage of the castle, 18 or 20 inches above which is the ceiling of the rearing room, there must be some preparation there to secure the materials, which is not the case in the broom system, for by that the brooms find support from the ceiling itself. The best way would be, when putting the castle together, to nail a 12-foot spline on each side to the tops of the supporting posts, on the inside of these, and 5 inches from the ceiling. Across the splines lay sticks, branches, or laths, and on these the spinning materials right up to the ceiling.

I must notice the invention of Count Delprino, member of the Chamber of Commerce and Arts of Alessandria, who seems to have introduced a novel and advantageous method of preparing the spinning materials, and which was to be seen in use at the late Universal Exhibition at Paris, where it appears to have attracted much attention. It is called the cell system, because each worm works by itself in a cell, with only just sufficient space to complete the cocoon. As I have not seen it in operation, I can only judge of the arrangement by having read an ingenious work of the Count's on the subject; but although my idea of it may differ from the reality, still the system is the same. It simply consists in thin boarding being fixed, on each side of which little cells are formed all over, from 1 to 1½ inch square, by gluing laths across, and filling up with thin pieces between. These prepared boards are set up instead of brooms, others being fixed to the under part of the stages. Doubtless, it requires some time to prepare such a series of cells, but the advantages are shown to be various. Each worm having only just sufficient room for itself, the production of double cocoons, the work of two or more worms, is to a great extent prevented. Less silk is wasted in outside work to attach the cocoon in a firm position, greater cleanliness is insured, with, in the end, a saving of expense. The worms lose less time in mounting and fixing on the place where they can spin, whereas in the old broom system they often fall, and either perish or produce defective cocoons.

This contrivance is easily managed, and put in position by one person. It is cleanly in use, expeditious, and will last many years. It effects a saving of from 10 to 25 per cent. of silk, economises work 6 per cent., and is productive of more uniform cocoons. It can be put up in any room without causing dirt or even dust, thus facilitating the rearing of silkworms even by ladies, of whom not a few would dedicate themselves to this amusing and profitable occupation. To facilitate ventilation the cells should have holes not larger than peas through the boards, which are not required to be thicker than a quarter of an inch. Very large silkworms require cells at least 1½ inch square, while cells 1 inch square will suffice for the small Japanese breed. I confine myself to these few observations, until I shall have myself proved the system practically.—LEONARD HARMAN, JUN.

BIRDS IN AUSTRALIA.—The stock of birds belonging to Mr. L. Underdown, at the Hindmarsh Hotel (Adelaide), is well worthy of a visit, and forms both a novel and interesting sight. The most prominent are two long cages containing about 35,000 pairs of beautiful Shell Parrots, most of them this year's birds. The noise and activity amongst them are sometimes wonderful. There are also no less than 1000 pairs of the well-known Cockatoo Parrots, besides small numbers of White Cockatoos, Magpies, and the much-admired Port Lincoln Parrot. A beautiful and delicately-marked little bird, of which Mr. Underdown has about 7000 pairs, is the Zebra Finch, so called from the striped coloured feathers appearing on the breast. We are informed that already the proprietor has sold 9000 birds of various kinds for exportation, most of them being purchased by captains of vessels going to England, to whom no doubt the establishment will prove a great convenience, while probably, with care and management, it may be made exceedingly profitable to the enterprising bird-dealer. The total number of birds in the yard would be not far short of 50,000 pairs.—(South Australian Register.)

OUR LETTER BOX.

SILVER-SPANGLED HAMBOURGS (W. Chynell).—You have not been treated liberally; but we cannot interfere. We have repeatedly warned our readers not to pay for fowls until they have seen them. A post-office order payable ten days after date enables this to be done.

GROUND OATS.—"Mrs. L. P." wishes to know of any place besides Sussex where she can obtain these for her poultry.

FOWLS WITH ULCERATED LIVERS (J. T.).—If all your fowls are similarly affected, young and old, the disease must, we suppose, be constitutional, and we should advise change of blood. Many of these diseases are hereditary. Supply the fowls freely with green food, and if you can, let them have ground oats instead of barley meal. Our cure, would, however, be fresh blood.

MANAGEMENT OF GEESSE (T. M. L.).—Almost all points in Goose management are disputed. To your first question we say, shut them all up together; second, the most successful Goose-rearer we know always leaves the eggs in the nest. We always leave one or two and take the others. These answers are in accordance with the ideas of the old women who rear Geese in the neighbourhood of large commons.

DORKING'S HEAD AND COME TURNING BLACK (Idem).—Purge the hen freely with castor oil. It is the only remedy you can adopt. Such cases often occur from poultry drinking snow water for a time.

FOWLS NOT LAYING (Kate).—You cannot eat your cake and have it. You cannot have the chickens for dinner in September and October, and for layers in December and January. Last year you had more pullets and more eggs, and that was as might be expected. It is not the property of any breed to lay in the winter; it belongs only to pullets. Directly they have passed into the mature state of hens they give up such childish habits, and lay only in the natural season. Nature has made their laying time to come on at that period most favourable for rearing the chickens. Thus, a hen just beginning to lay will be broody in or about April, will hatch out her chickens towards glorious May, when there are long days and short nights, genial air, and lots of insects. The lusty little things grow freely, and are very different from the winter chicks. This is why the hens do not lay. Your yard is badly made up for early eggs. You have thirteen bees and three pullets—"all this sack to a halfpenny-worth of bread." The laying element is sadly in the minority. Reverse your arrangements next year, and you will not complain. Have a very little patience now, and all will be well, though rather late.

DORKING'S EGGS (H. C. J.).—The colour of a Dorking's egg has no more to do with the plumage of the bird it produces than that of a man's hair has with his height.

HACKLE OF CINNAMON COCHIN-CHINA HEN (North Devon Subscriber).—There was formerly a description of Cinnamon Cochin hen, which was required to have a dark rim at the bottom of a hackle. We have seen none of them for years. We know no Cochin hen or pullet at the present day to which it is not a disadvantage, but it is not a disqualification.

SPANISH COCK'S COMB FALLING OVER AND TURNING PURPLE (Black Spanish).—We could answer with more certainty if we knew the age of the Spanish cock. If he is young and his comb is still growing, there is little hope of improvement; if he is an adult, and the comb has only lately gone over, it may be only a question of condition. Bathing with vinegar and cold water, and nourishing diet, will probably bring it up. High bred Spanish fowls are constantly playing pranks in moulting, and throwing white feathers; sometimes in two moultings, they will turn from black to entirely white, they will then become black again, but will always breed black chickens.

DISTINGUISHING THE SEX IN EGGS (Idem).—There is no plan for distinguishing the sex in eggs. An old theory was that the cocks came from pointed eggs, and the pullets from round ones. We do not believe in it. We have tried one plan, and it answered. We were told the early eggs of a sitting give nearly all cocks, and the late ones pullets. So far as we have tried it we are bound to say we find there is truth in it.

BRAHMA POOTRAS (G. W.).—We never knew the time when Light Brahmas were required to be vulture-hooked. All the books give the points of the breed, and that appendage is not among them. The production of a Brahma from the cross you name is an accident. The produce took after the father. To prove anything the same result should always follow. We were struck, as you were, by the continuous laying. Our correspondent "J. P." will no doubt give full explanations to his brother amateurs.

SPACE PIGEONS REQUIRE—FLOOR (Captain).—If your birds fly at large or into an aviary, you may keep twenty-five pairs of Nuns and Trumpeters in a space 11 feet long, 6 feet wide, and 7 feet high, having plenty of room for their breeding. If constantly confined in the space named, eight pairs will require the room so as to be kept in good plumage. A wooden floor is preferable for Pigeons. If raised off the ground only 6 or 8 inches, and if cleaned every morning as it ought to be, it will always keep dry.

PIGEON HEN NOT LAYING—FOOD (Idem).—If the Carrier hen was bred last season she will not likely lay for a month or six weeks yet. Young hens do not sometimes lay before the end of April or during May. Feed your birds well twice a day; give Indian corn, tares, and a few tick beans, and keep a constant supply of old bruised mortar and fresh water. The strongest birds never fare better. Clary is an herb related to sage. Give your Pigeons plenty of clean water to wash in, daily if possible, and a little salt mixed with fresh earth from a garden or field for them to peck at. Let the birds have the food we have named. Give no wheat except during the breeding season, and no barley at any time, as they both cause purging during winter. The harder the food at this season the better. Read our reply to "H. W." in the Journal of the 23rd ult.

PIGEON LAYING IMPERFECT EGGS (A Young Fancier).—The probable cause is that she is too "well fed." Less food and more exercise would restore her to health.

PIGEON DISEASED (Amateur).—We fear your bird will die, as the canker is so very bad. Try to remove the diseased piece with a little smooth thin bit of wood, and then rub the part with caustic, doing this thoroughly but carefully.

BEES FLOWERS (Wasp).—Sow borage, mignonette, and Nepeta Mussinii. Be assured, however, that fields of clover, sainfoin, and buckwheat, heaths, lime trees, &c., are the best sources of honey. (A. T.).—To the above answer we can merely add that there is no single flower known that does not yield honey; and the bees' harvest depends upon the country within a radius of five miles round their hive. Flowers near the apiary contribute slightly to their store, but on the country at large depends their chief store of honey. The seed of *Phacelia tanacetifolia* is in the seed lists of some of the chief London seedsmen, and therefore can be readily obtained.

WEEKLY CALENDAR.

Day of Month	Day of Week.	MARCH 5—11, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year
			Day.	Night.	Mean.								
5	TH	Meeting of Royal, Linnean, and Chemical	48.7	31.6	40.1	16	37 af 6	47 af 5	44 af 1	23 af 4	11	11 37	65
6	F	Meeting of Royal Institution, [Societies.	48.7	30.0	39.3	18	35 6	48 5	59 2	9 5	12	11 22	66
7	S	Royal Horticultural Society, Promenade.	49.3	32.4	40.9	17	33 6	50 5	20 4	49 5	13	11 8	67
8	SUN	2 SUNDAY IN LENT.	49.4	31.7	40.5	17	31 6	52 5	38 5	21 6	13	10 53	68
9	M	Meeting of Royal Geographical Society.	49.3	30.9	40.1	11	29 6	54 5	55 6	51 6	15	10 34	69
10	TU	Meeting of Institute of Civil Engineers.	49.7	31.6	40.7	15	26 6	55 5	14 8	19 7	16	10 22	70
11	W	Meeting of Royal Agricultural and Geo- logical Societies, and Society of Arts.	49.2	32.1	40.7	17	24 6	57 5	29 9	47 7	17	10 6	71

From observations taken near London during the last forty-one years, the average day temperature of the week is 49.2°; and its night temperature 31.5°. The greatest heat was 67°, on the 10th, 1826; and the lowest cold 7°, on the 10th, 1847. The greatest fall of rain was 0.69 inch.

FURTHER NOTES ON LILIUMS AND THEIR CULTURE.



HAVING in my first paper confined myself entirely to the speciosum tribe, I now proceed to notice some of the less-known species. I have also ventured to make a few remarks on the cultivation of Lilies. I have had many failures, but I still work on, hoping and longing for the time when the darkness of failure shall belong to the past, and be fully recompensed by the mid-day splendour of complete success.

Ree Hakoe (Groenewegen).—Petals broad and overlapped at the base. Flower large, and nicely recurved; form almost perfect; peculiar salmon-coloured ground, bright yellow band in the centre, tips of the petals bronze red, a few maroon spots, and here and there a crimson stain. Erect-flowering, about 12 inches high. Very distinct, peculiar, and fine. Quite of the eastern style of colour.

Buschianum (Van Houtte).—Small flower, neatly recurved, and of perfect shape; vermillion wax-like ground, with a few small dark spots. Erect-flowering, about 30 inches high. Scent rather unpleasant. The stigma is shorter than the anthers. Very perfect and beautiful.

Concolor (?) (Hooper & Co.).—Petals broad, and just meeting at the base, beautifully recurved; centre of the petals yellow, tips bright crimson blood colour, dark spots. Erect-flowering, about 30 inches high. Slight scent. Stigma and pollen very dark. Very brilliant; almost perfect in form and colour. I have recently heard from a first-rate authority that "the flower of the true *Concolor* is somewhat star-like, the petals very little recurved, and of a singular red—vermillion with a coppery hue; occasionally, but very seldom, a few dark spots."

Formosum (A. Verschaffelt).—After the style of *Ree Hakoe*, but much better. Height about 2 feet. Very beautiful.

Fou Kwam (Barnaart).—Very large and fine; style of *Ree Hakoe*, but larger, not so much recurved, and very few spots.

Ja-Ehal (Barnaart).—Same style as *Ree Hakoe*, but not quite so large, more recurved, and rather darker. *Ja-Ehal* from Groenewegen was very different from this, being much like *Thunbergianum citrinum*. I do not know which is the true *Ja-Ehal*.

Sygets (Groenewegen).—Petals narrow, and each one separate from the other. Flowers large, well reflexed, and of good form; citron ground, with yellow centre, a few purple maroon spots; bright maroon tip to stigma. Erect-flowering, about 12 inches high. Novel and pretty.

Ideno Sato, Ogontio, Kemigajo, and Ki-kak, had from Groenewegen; *Thunbergianum aureum nigro-maculatum*, from Van Houtte; and *Thunbergianum citrinum*, from Barnaart, are all similar in style to *Sygets*.

Browni, or *japonicum verum*.—Very large trumpet-shaped flower; pure white inside, outside stained with dull purple. Very beautiful and distinct. I find it will occasionally lie dormant for a season.

Longiflorum, *eximium*, *Takesima*, and *Liu Kiu*, all have very beautiful trumpet-shaped white flowers, and are worthy of a place in every collection.

Wallichianum has immense, somewhat trumpet-shaped flowers of pure white colour, and is very beautiful, but I find great difficulty in inducing it to bloom; with me it is continually splitting up into small offsets. I suppose I have not as yet found out the proper way of cultivating it. I hope for instructions from some of the contributors to "our Journal."

When I began to grow Lilies I used nothing but sandy loam, but I did not find it very satisfactory, as the soil soon became sour, and I consequently lost some of my best Auratums. I next used nothing but fibrous peat, with plenty of coarse sand, and a good quantity of crushed charcoal, also a small quantity of cocoa-nut refuse. This was a great improvement on the old soil, and the Lilies did well; but I find an addition of 25 per cent. of good turfy loam is better still, as it gives more for the plants to feed on. Plenty of drainage must be given, otherwise the buds will drop, even if the Lilies do not die.

At first I always put silver sand round the roots when I potted my Lilies, but I cannot recommend the practice; the bulbs appear to prefer immediate contact with the soil.

Many of the Lilies, if in perfect health, emit rootlets from the stems just above the surface of the soil; these rootlets should receive every encouragement, and I believe the general course adopted is to shift into a larger pot. This plan I do not like, as Lilies are often over-potted, which is a great evil, not to mention the additional space required at all seasons. I have had some zinc collars made from 1½ to 2½ inches wide, and of lengths to suit the various sizes of pots. These collars are cut one out of the other, and are, therefore, inexpensive. One end, for 1½ inch of its length, is about a quarter of an inch wider than the rest, and this extra width is turned over so as to form a sheath for the other end when the collar is bent for use. When the rootlets appear I put one of these collars round the inside of the pot, and fill up with proper soil. In the autumn the collars and additional soil are removed.

Lilies require great attention during the earlier stages of their growth, otherwise they will become drawn and unsightly. Until they are growing vigorously water should be used but sparingly, but afterwards they require a plentiful supply.

About the middle of May I turn my Lilies out of the greenhouse, and place them on coal ashes in a sheltered part of the garden, and to prevent danger from frost and heavy rains I place a temporary covering of tiffany over them. I bring a few pots at a time into the greenhouse, and so obtain a long succession of blooms.

Shortly after the Lilies have done flowering I lay the pots on their sides to prevent excess of moisture, which is very injurious to Lilies in the autumn. When they have matured their growth I place them under the stage of my greenhouse, where all the attention they require during the winter is a slight syringing occasionally to prevent the soil from becoming dust dry. In January and February

the supply of moisture should be slightly increased, and immediately there is any appearance of growth the pot must be brought up to the light. I have shelving boards put beneath the stages to prevent the drip from the other plants reaching the Lilies. Drip is death.

Most persons advocate repotting in the autumn, but I prefer doing it in the spring. When shifted in the autumn there is no root action going on for months, and there is great danger of the bulb suffering either from the soil being too dry or too wet; but if potted in January or February, the roots lay hold of the soil at once, and grow vigorously. Last March I had some choice Lilies from Prussia; they were shaken out of the pots, and sent to me packed in damp moss. I potted them carefully, and although some of them had made considerable growth when received, none of them suffered from the late removal; in fact, they were some of my healthiest and best plants.

I have said nothing about keeping the plants clean and free from blight, and properly tied. Lovers of the beauty of the Lily cannot be tolerators of filth and deformity.

I am neither an artist nor a botanist, and, therefore, fear that my attempts to describe the various Lilies noticed, will not convey a correct idea of their forms and colours, but I ask pardon for all my errors and shortcomings.—*Hesperus*.

ESTIMATE OF SOME VARIETIES OF POTATO.

BEFORE stating the result of my trial of fourteen sorts of Potatoes, I must describe the garden and soil. The garden is about half an acre in extent, or a little larger, surrounded with buildings and walls, yet well exposed to the sun; medium garden soil, rather poor. It grew a good crop of Potatoes the season before, and received no fresh manure for the trial crop. All the sorts were somewhat injured by the late frost in May, but being all near together were injured alike. The sorts were

- | | |
|--|-------------------------------|
| 1. Albion Ashleaf Kidney. | 8. Cheshire Pink Eye. |
| 2. Rivers's Royal Ashleaf Kidney. | 9. Prince of Wales Kidney. |
| 3. Ashleaf Kidney (old variety), a very fine true stock. | 10. Somerset Reds. |
| 4. Mona's Pride Kidney. | 11. Ash-top Fluke (Carter's). |
| 5. Myatt's Prolific Ashleaf Kidney. | 12. Fortyfold. |
| 6. Milky White (Wheeler's). | 13. Paterson's Victoria. |
| 7. Early Oxford. | 14. Fluke. |

Of each of the above fourteen sorts I selected four good, medium-sized tubers, taking great care of them. This is a point much neglected by Potato-growers. From my experience and observation, I fully believe that if growers would pay more attention to the seed they plant, they would obtain far larger crops than they do. I have at this moment received a sample of four tubers from a person who has bought a ship-load from France or Ireland, with a message that they are only fit for planting; but on examination I should say they are very unfit, being so terribly bruised. Parties are buying these at 12s. per sack, because they are cheap, without a thought of the crop in future. However, say what one will, some people will throw away a pound to save a shilling. To proceed, then—

1. *Albion Ashleaf*.—The four tubers yielded 2 lbs. 2 ozs. of produce of good flavour and quality. The yield of this sort where not touched by the frost was much larger. It is a first-class kind, being good in quality and very prolific.

2. *Rivers's Royal Ashleaf*.—Yield only 1 lb. of small roots, quality only moderate. Somehow this sort varies very much; on some soils it is almost worthless, takes the disease, is a poor cropper, and almost flavourless; while on other soils it is quite different, being good in crop and quality.

3. *Ashleaf* (old variety).—Yield 2 lbs., very good in quality, but not so dry as or equal to Albion.

4. *Mona's Pride*.—Yield 3 lbs., not quite so early as No. 1, but a first-class prolific Potato, and a sort that seems to suit all soils alike.

5. *Myatt's Prolific Ashleaf*.—Yield 2½ lbs., but badly diseased. A well-known second early Kidney, which certainly does better on some soils than others. On mine it is of very poor quality.

6. *Milky White*.—Yield 1 lb. 5 ozs., of first-class quality and appearance. It was very weak in growth, and in consequence, I believe, the frost had more effect upon it, hence the light weight; and while we ought, I think, to grow the strong kinds, yet this is a favourite with me, and I mean to continue growing it, as the yield of other plants not injured by the frost was very good.

7. *Early Oxford*.—Yield 2½ lbs.; quality only second-rate. This being yellow, and preferring a white Potato, I have discarded it; yet to those who do not object to a yellow Potato, it is a passable sort.

8. *Cheshire Pink Eye*.—Yield 1½ lb. First-class in point of quality and whiteness, but weak in growth, and variable in crop on different soils.

9. *Prince of Wales Kidney*.—Yield 5 lbs. This possesses one good quality and two bad; its good quality being, that it is a very heavy cropper. It is certainly the heaviest cropping Kidney I ever knew, but this will not compensate for its two bad qualities—namely, that it is one of the kinds most liable to the disease, which spreads most rapidly; and, secondly, it is worthless in point of quality. Presuming this is its true character in the eastern counties as well as in the western, I am not surprised that we see no advertisements of the raiser this season.

10. *Somerset Reds*.—Yield 7 lbs. Extremely white, and equal in flavour and every other good quality to the Early Fortyfold, but a much heavier cropper. It is a strong grower and resists the disease; a truly first-class second early sort.

11. *Ash-top Fluke*.—Yield 3½ lbs. I wish Messrs. Carter had sent a "new thing," better worth the high charge than this. In quality I do not consider it anything like equal to either of its reported parents, and a much weaker grower than the Fluke. If we are to have a second-early Potato, let the Early Fortyfold be a standard of quality.

12. *Early Fortyfold*.—Yield 3 lbs. A well-known first-class sort, if true, needing no comment here.

13. *Paterson's Seedling Victoria*.—Yield 9 lbs. Having given such a full report of this sort recently (page 135), nothing more need be said, excepting that I have sent the Editors a sample to try and report upon.

14. *Fluke*.—Yield 3½ lbs. Very good in quality, but stringy at the tail end, and a poor cropper unless it has a change of soil every year.—*D., of Somerset, Dorset, and Wilts.*

PLEROMA ELEGANS AND STATICE HOLFORDI CULTURE.

ALL who love gardening have their own favourite flowers which are more carefully watched and tended than the general collection. The best positions in the greenhouse are assigned to them; they are more carefully handled in the potting shed; and on busy days, if the others are indiscriminately watered, more care is bestowed on the favourites. But some sorts of flowers are general favourites, and the two I wish to make a few remarks on are of the number.

The first, *Pleroma elegans*, is admired for its noble appearance as a greenhouse plant, its glossy green leaves, and its large, circular, purple flowers. The other, *Statice Holfordi*, is distinguished for its handsome branched spikes of bright blue flowers, and the length of time it continues in flower. They are generally considered greenhouse plants, but both of them are benefited at certain times of the year by a higher temperature than is generally kept up in a greenhouse; I will, therefore, describe the system of cultivation by which I grow them successfully.

PLEROMA ELEGANS is increased by cuttings of the half-ripened wood in August; and a good way to manage this, as well as numbers of other greenhouse plants, such as Azaleas, Pimeleas, Lachenaultias, and others, is to place a 5-inch pot within a larger pot, filling the intervening space with sand. After carefully placing the drainage in the 5-inch pot which is to contain the cuttings, spread over the drainage a little moss or fibre of some sort, to prevent the soil from mixing with the drainage; then fill the pot three parts full with the following compost—viz., two parts turfy peat chopped fine, one part loam, and one part silver sand, with a layer of silver sand on the top. After pressing the whole down rather firmly insert the cuttings; then place the pots on a shelf near the glass, but shaded from the sun, and water them until the water runs through the hole in the bottom of the pot. Do not give the water in the potting shed and then carry the pots into the greenhouse, as the cuttings, being inserted in sand, will be loosened and thereby injured. It is also necessary to place a bell-glass over the cuttings; the rim of the bell-glass will rest on the sand which is contained in the space between the two pots. This system of propagating greenhouse plants is the best for those who only require a limited number. The bell-glasses will require to be taken off daily, wiped dry with a cloth, and replaced almost immediately,

first removing any mould or decayed leaves, and watering the cuttings if they require water.

As soon as the cuttings are rooted they ought to be shifted into large 60 or small 48-sized pots, and in February the young plants ought to be placed in a growing temperature of from 50° to 55°. An intermediate house is the best for them. Not having the convenience of an intermediate plant house, I generally place such subjects in a vinery started on the 1st of February; they delight in such circumstances to be syringed with tepid water daily. In order to keep the plants bushy, and ultimately to make them handsome specimens, they ought to be staked out, and have the points of the young growing shoots pinched out. In June the plants will require to be shifted into larger pots. In July they may be placed in the greenhouse, and should be kept there throughout the winter. In February place the plants again in a temperature of from 50° to 55°, increasing the temperature, of course, as the season advances. As soon as the first flowers begin to expand remove the plants to the greenhouse.

I treat the *Pteroma* from year to year in the manner described, and under this treatment it blooms profusely. I generally repot, if the plants require repotting, as soon as the flowering season is past. The compost I use consists of two parts turfy peat and one part loam, with a little sand and charcoal to keep the whole sweet and porous.

STATICE HOLFORDI is another distinct and valuable plant for the decoration of the greenhouse during the summer and autumn. One excellent quality which it possesses is, that the flowers continue two or three months in perfection. It is also of a very free habit of growth, and must not be stinted for pot room. It is propagated by cuttings, which may be readily struck in a little bottom heat. I generally place one cutting in the centre of a 60-sized pot, using the same compost as that recommended for the *Pteroma*. The cuttings must receive every attention, shading them from the sun, and keeping the leaves moist. They will soon root, and will require to be shifted into pots a size larger, so that they may receive no check to their growth. Scarcely any plant will become a fine healthy specimen if it be stinted for water, or have not sufficient pot room; and this rule is especially true of *Statice Holfordi*.

I use the same compost for this plant as for the *Pteroma*, with the exception of a little rotted cow manure and a few crushed bones. The *Statice* is also benefited by being watered with weak manure water occasionally when the pots are full of roots.

The preceding remarks may be useful to those who have had any difficulty in growing the plants referred to. *Pteroma elegans* assumes a sickly appearance if it is continually kept in the greenhouse, and the *Statice* will damp-off in pieces, and the plants be rendered unsightly, but treated as above they will not fail to give satisfaction.—J. DOUGLAS.

GESNERAS FOR WINTER BLOOMING.

In reference to *Gesnera cinnabarina*, I most confidently endorse all "J. W." says respecting it. There are also several other most desirable kinds; we grow one we call *Gesnera ignea*, which is far better than *G. cinnabarina*, having finer foliage, and the flowers are extremely beautiful and bright in point of colour. For contrasting with such plants as *Cecylogyne cristata*, *Dendrobium nobile*, *D. Pierardi*, and *Eucharis amazonica*, it is remarkably fine, and as a single plant it is very striking. We have at times filled large dishes with from eight to ten pots plunged in cocoa-nut-fibre refuse; such masses are very effective.

We also grow another winter-blooming *Gesnera*, called *refulgens*, and by some *resplendens*. This is very distinct from *cinnabarina*, growing very much larger in the same time, and with the same treatment as *ignea*. We have now plants of it from 3 to 4 feet high, which have been gorgeous objects; the leaves are about a foot in diameter when well grown, and in the earliest stages of their development they are really lovely. Their colour is very distinct from that of the foliage of *Gesnera cinnabarina* and *ignea*, being mostly of an exceedingly rich maroon. For foliage alone these plants are well worth their room. The flowers are also very fine, large, and numerous, in colour a deep rose. We bring the *Gesnera refulgens* into bloom in the middle of October, and the plants continue good for three months. We then remove them to make room for the *cinnabarina* or *ignea* section. When in a small state these plants are most handsome and effective for table decoration.

There is another *Gesnera* which should be generally grown,

the name is *G. Hibbertii*; this makes a very charming contrast to the other two. In point of foliage alone, the three *Gesneras* named, if judiciously mixed, would make a very pretty picture without a flower. *Hibbertii* will endure more cold than any of the family, and we find it very useful for our conservatory during September, October, and November. It grows about a foot in height; the leaves are nearly circular, shaded with different tints of green, and, having the velvety appearance peculiar to many of this family, render the plant very desirable. The flowers are produced in great profusion; they are orange scarlet, and very effective.—WILLIAM PAYNE, *Fir Vale, Sheffield*.

LICHENS ON FOREST TREES.

I AM anxious to know, through the pages of THE JOURNAL OF HORTICULTURE, if any of your readers have observed the Lichen, so common to forest trees, on the increase of late.

Here it is increasing every year so much, that fine healthy young Oak trees are fast dying. It has also attacked the Beech, common Spruce, and Silver Fir, but not to the same extent as the Oak and Whitehorn, on which it is causing wholesale destruction. My attention being called to it about two years ago, I suggested open drains, as I thought it might have arisen from moisture at the roots, for at the place where it was then so bad the soil was a stiff retentive clay. Although these drains have now been open upwards of two years the Lichen has not in the least decreased, and now I find it has been spreading very extensively within the last twelve months. This day I had some drains, which have been made more than seven years, opened, thinking that they might be choked by roots or some other cause, and that the water was consequently prevented from flowing off by them; but I found them working most satisfactorily. They are stone drains from 2½ to 3 feet deep, with from 18 inches to 2 feet of stones.

On looking at the trees here which are so very much infested with Lichen, one would be inclined to think that the cause is damp or water about the roots; but now, seeing that drainage has done no good, and the trees are fast dying, the evil is really alarming. To use lime, &c., or any of the remedies for moss on trees, would involve endless labour and expense. I feel anxious to know if any of the readers of the Journal have observed Lichens so much in other places as we have to complain of here.

I enclose pieces (each separately named), of the young shoots of several sorts of trees severely attacked for your inspection.—J. LAIDLEY, *Adare Manor, Adare*.

[The Lichen on the Oak and on some other trees is the *Evernia prunastri*; but there are also other Lichens, as *Borreria ciliaris* and *Usnea plicata*. We would deepen the drains and thin the trees. The drains ought not to be farther apart than 12 feet in such a heavy soil. If the trunks and main branches could have the Lichens removed by scraping it would benefit the trees. After the scraping, wherever practicable, we would pare and burn the top spit of the soil, and spread the ashes over the surface.]

IS A DRY OR MOIST ATMOSPHERE THE MORE CONGENIAL FOR SETTING MUSCAT GRAPES?

IN accordance with the request of your correspondent, "NEMO," I will endeavour to answer the questions asked by him, though it may be in a somewhat simple manner.

He asks, in the first place, at what time the adherent to the steaming process has his Grapes ripe. I think, if he look carefully over my communication again (see page 125), he will find nothing there about a steaming process for Muscats while in flower. The Muscat Grapes referred to are ripe in the month of August; the first bunches that are cut are generally for exhibition.

The next question he wished to have answered is regarding the system of Muscat-growing practised here. On starting the Vines, in the first place we commence with a temperature of from 45° to 50°, rising gradually as the Vines advance in growth, at the same time going through the usual process of syringing and damping. When the shoots have grown from an inch to 3 inches in length, the syringing is discontinued, steaming being carried on till the first flowers are perceived to be opening, then it is discontinued altogether. During bright days, whilst these Muscats are in flower, the passages of the house are occasionally sprinkled. When we see the Grapes are sure to set, then moisture is increased. The temperature

while the Vines are in flower is from 70° to 75° by fire heat, raised to 90° by sun heat.

But we have strayed from the principal part of the question first raised, which was, whether a dry or moist atmosphere is the more congenial for "setting" Muscats; not for the growth or ripening of the Grapes.

We have also another large Muscat house, in addition to that named in my communication already referred to, and which contains eleven large Muscat of Alexandria Vines. These are in flower in the month of May, and the house has the same treatment as the other. Each Vine has to support twenty-four bunches as a fixed number every year, the rest being cut off, and I am sure no one could wish to see a finer house of Muscats for regularity of bunches and berries. The last of the bunches in this house were cut on the 21st of last January, and were fine in condition, but the berries rather shrivelled, although not having the appearance of raisins.

These few remarks and the others previously made by me are not offered for the sake of argument, but merely as facts coming under my notice. It would be as difficult to convince gardeners which is the right road to success—a dry or a moist atmosphere, as it is to convince many which is the right system of Grape-growing, the extending or the restrictive mode.—H. BATTRAM, *Foreman, Cyfartha Gardens.*

AUCUBA JAPONICA.

I DO not know why, but it is so, that frequently the plants, shrubs, and trees, which are so very much belauded on their introduction, seem soon to go out of the thoughts of the gardening fraternity, and I often find that plants there is a rush for at guineas, when they fall to half a guinea or less are heard of no more, excepting when now and then there is a grumbling letter from some disappointed purchaser.

Now, there is the Aucuba with its varieties, great things were promised in its name; no one even writes about this beautiful shrub now, and we are quite in the dark about what is being done with it. When the male plant first arrived in this country we were told it would show itself to be a most valuable acquisition for the arboretum. Perhaps it has not quite come up to the expectations formed of it, and I am told the berries of the female plant do not set well out of doors. Has any one tried it? I will give my experience of it. In the year 1866 I put out two small plants of the female with the berries set. They did not make much progress until about November, when they began to swell; they completed their growth in January, and in spite of the very severe weather, ripened into a beautiful orange vermilion by the end of February, 1867. I sowed the seeds in May, and have now some young plants from them.

Having a young male in bloom in my sitting-room at the commencement of the year 1867, I shook the pollen from it on some writing paper, and then put it from this into a small glass bottle, and when a large female plant that I have had some years in my garden came into bloom some time after, I touched the flower lightly over with a camel's-hair brush, dusted with the pollen from my bottle. The result is that I have now many cymes of large berries just becoming of a fine scarlet colour.

What I wish to draw attention to is this, that we have now the opportunity of making some of our fine old plants of the Aucuba look perfectly beautiful in the spring with so little trouble, as the cold (and I think 1867 should be a test), does not seem to affect the ripening of the berries in the least; mine not only ripened but grew after one of the most severe winters of late years.

Has any one planted out the male and female side by side, and, if so, will they inform me with what success as regards the setting of the berries?—HARRY.

WINTER QUARTERS OF THE RED SPIDER.

In your number of the 19th of December, 1865, the above question was asked by "T. G." As it is one of vast importance to the Peach-fancier, any solution must be acceptable; and the present time being recommended by Mr. Rivers as the most seasonable for amateurs to prune their Peach and Nectarine trees, much of this work will now be going on amongst growers, and I have no doubt that many will by a little observation be able to corroborate my statement.

Last season a few of my Peach trees in 11-inch pots were much infested with the red spider. In December I gave them

all a good dressing with Gishurst compound, 4 ozs. to the gallon, and examined every part of them, and everything about them most carefully, which led me to discover at least one of the winter quarters of the enemy. My trees being young, and trained as perpendicular cordons in pots, of course required stakes, for which I used bamboo split to the proper size, with bast for ties. In taking the old ties off, I found in each piece of bast, just where the knot was tied, myriads of the red-coated rascals, and in every crack in the bamboo they swarmed. I gave a sigh of relief, and was thankful, for I intended to have used the same stakes this year.

I hope the relation of these facts will throw some further light upon the subject, and induce others while looking over their trees and plants not to forget to give an eye to the appliances used about them.—T. L. C.

CATERPILLARS ON GOOSEBERRY BUSHES.

AMONG the many receipts which have been given in your pages from time to time for the cure of this pest, I have not observed one that I have known, and seen used with good effect, and that is fine sea sand. This, if collected fresh every year from the beach, kept from being washed by rains, and sprinkled over the bushes when the grub begins its ravages, will effectually put a stop to them. Any person who may try this simple remedy will rid the bushes of the caterpillars, and, if it be persevered in, will finally prevent all injury.—J. LAIDLEY, *Adare Manor, Adare.*

MUSHROOM CULTURE.

AMONG the plans for securing Mushrooms described in your pages, I have not noticed the simple one of spawning Melon beds at the time of earthing-up. Where there are Melon pits heated by hot water, it is a certain method of securing a continued succession from Christmas to the end of March, a time when they are very welcome. The plan adopted here for I may say the last twenty years, is to insert four or five pieces of spawn along the back and front of a three-light pit, at about 1 foot or 15 inches from the wall. Of course the spawn is covered with the soil used for earthing-up. The pits are filled with Variegated Pelargoniums in the autumn, and all there is to do is to move a few of the pots to give the Mushrooms room when they begin to come through, not much trouble where Mushrooms are an object, and far less than the ordinary care required for beds in a Mushroom house.

This method has always succeeded, even when the beds in the ordinary house have failed.—J. W. K.

[There is nothing new in the method you describe. We have adopted it often in the case of Cucumber beds, as well as Melon beds. When, either from linings of dung, or hot water, the spawn is not subjected to an over-high temperature, when the roots of the Melons or other plants do not run into the spawn, and when the bed does not require to be touched all the winter, then the plan will always succeed tolerably well.

Our objections to its use are the injury done to Melons when the roots penetrate into ground occupied with spawn of fungi; the danger of too much heat to the spawn when linings are used; and the necessity of keeping the bed of soil untouched in the winter months, when otherwise that bed might be used for many purposes. When a bed is so left we have frequently spawned it all over, and kept plants a foot above it on a stage, so as to have access to the Mushrooms easily. As Mushrooms, however, do not require glass for their culture, our own opinion is, that where glass is scarce, it is best to keep the glass for plants, and have a separate bed for Mushrooms. The practice detailed might, however, be suitable to many.]

CHECK TO SLUGS.

LIKE your correspondent, on page 457, December 19th, I have proved the inefficiency of lime, soot, &c., as preventives of the depredations of slugs, but I have never known them pass Barley chaff, hails, awns, or beard, as it is variously termed in different parts of England. From the littery appearance of the material it cannot be used for every purpose; but, of course, every gardener knows where it can be employed. Wherever a circle of it is placed round a plant, inside the rim of a pot, or on the ground, no slimy-coated intruder will pass. When a

neighbouring farmer is winnowing Barley, I beg as much as I think will be necessary, have it run through a sieve, and use it sufficiently thick to prevent any of the slug tribe attacking a plant.—F. FLITTON.

ROYAL HORTICULTURAL SOCIETY.

THE Royal Horticultural Society has not unfrequently been reproached with a want of sympathy for science, and charges have at various times been made that it neither prosecutes nor encourages it. These charges may or may not be true, and their value depends very much on the quarter whence they come, and the standpoint whence the accusers regard the object and operation of the Society. That there is wide scope for the Society to prosecute a course of scientific investigation there can be no doubt, and that the field has not been cultivated as it might have been is equally doubtless; but to say that the Society either ignores, neglects, or discourages scientific investigation as regards horticulture and the laws of vegetation is contrary to fact, as may be shown by a reference to its published Transactions and Proceedings in bygone days, and by the appointment of the Rev. M. J. Berkeley as one of its present Horticultural Directors. It is true that in those latter times, now happily past, when the Society was struggling through a transition state to a new existence, neither practical horticulture nor scientific research received their due attention; but it is unfair, now that it is working with a will in its legitimate field, and doing its utmost so far as its means will allow, to recall the days of its distress, and endeavour to establish against it charges which, however true then, are entirely unfounded now. For the last two or three years the Rev. M. J. Berkeley has been labouring exclusively in the interest of science in connection with the Society, and how useful his work has been is known to many, and indeed to all who have taken the trouble to inquire.

By way of developing more fully its scientific character, the Council announced at the meeting on Tuesday last that they had decided on forming a Botanical, or what may be regarded as a Scientific Committee. As is well known, there have been for many years the Fruit and Floral Committees in full operation. These deal with the subjects that severally appertain to them; but hitherto there has been no similar body engaged in scientific investigation, and it will be gratifying to our readers to know that there will now be associated in the Society a body of men competent to deal with the abstruse and difficult questions which are constantly arising in horticultural practice. The subject will be understood from the following paper issued by the Council:—

"1. The Fruit and Floral Committees of the Royal Horticultural Society have for their objects the encouragement of the production of new and improved varieties of fruits and vegetables, plants and flowers, and the examination of the pomological and floral subjects submitted at the Meetings, or grown in the Society's garden at Chiswick; and these Committees have dealt with the results of horticultural practice brought under their notice in a manner which leaves little to be desired.

"The Fruit Committee have also disseminated reliable information respecting the adaptability of particular kinds of fruits to the varied conditions of soil, locality, &c., throughout the United Kingdom.

"2. At the general Meetings of the Society, the objects of scientific interest which have appeared before the Fruit and Floral Committee Meetings, together with other points bearing on physiology, and the culture of plants and trees, have been regularly brought forward, and occasionally discussed.

"3. The Council now consider it advisable to invite the co-operation of physiological botanists and of chemists in the formation of a Committee, whose special functions shall be, to promote and encourage the application of physiology and botany to purposes of practical culture, and to originate experiments which may assist in the elucidation of horticultural subjects.

"4. The Committee shall consist of a Chairman, who shall be a member of Council, three Vice-Chairmen, and any number of gentlemen, whether Fellows or not, interested in vegetable physiology and horticultural chemistry.

"The three Horticultural Directors are to be considered *ex-officio* members of the Committee.

"5. The Committee shall sit on the days fixed for the general Meetings of the Society at such times and places as may be found convenient.

"The foregoing resolutions shall, as a preliminary step, be communicated to botanists, physiologists, and chemists, with a request for their co-operation as members of the Committee, or as corresponding members."

It will be seen that these resolutions deal with the subject in general terms, and we presume that in a subsequent announce-

ment the details will be gone into more fully. We are glad to see that the constitution of this Committee will not be confined exclusively to botanists and vegetable physiologists, but that chemists also are to be associated. The microscopists also ought to form an element in this new Committee. The revelations of the microscope are not less important than those of the laboratory, and when we consider how valuable both are in union with physiological research, we shall hope to see great results from such a combination.

Among the subjects which come within the province of the new Committee we may instance—1, The examination and elucidation of abnormal structure; 2, The principles and practice of hybridising and cross-breeding; 3, The investigation of sports in form, habit, and colour, and the agencies by which these are produced; 4, The theory and practice of grafting, and the influence of the stock on the scion, and the scion on the stock; 5, To inquire into the origin, nature, and treatment of the diseases to which plants are subject; 6, To regulate and correct the nomenclature of garden plants, and to determine their synonymy; and finally, To institute experiments based on scientific principles, which may tend to secure certain results in cultivation, and to avoid the repeated failures which occur through ignorance of the fundamental laws which govern all organic as well as inorganic matter. These, and many more subjects which will suggest themselves after the Committee is in operation, when subjected to the consideration of such a body cannot fail to have a most beneficial effect on practical horticulture.

This movement has our heartiest support, and we trust it may be successful.

FORTNIGHTLY MEETINGS.—March 3rd.

FRUIT COMMITTEE.—G. F. Wilson, Esq., in the chair. Mr. Davis, market gardener, Starch Green, Hammersmith, sent two packets of Mushrooms, such as he has been supplying to Covent Garden from the same bed since the 1st of September last, at the rate of twenty bushels a-week. They were remarkably handsome and of fine substance, and were much admired by the Committee. Mr. John Glen, gardener to Mr. Palmer, Elmstead, Chislehurst, Kent, sent very good specimens of the Potato Onion. Mr. Davie, gardener to the Marquis of Huntley, Orton Longueville, near Peterborough, sent dishes of handsome specimens of Beurre de Rance and Easter Beurre Pears, neither of which, however, was of good flavour. Mr. Bull, of Chelsea, exhibited specimens of several varieties of Melville's Curled Borecole, which are represented to be perennial; but as they did not appear to differ from other varieties of coloured Borecole in cultivation, and as there was no evidence before the Committee that they were perennial, the Committee decided that they should be grown in the Society's garden at Chiswick before a proper examination of them by the Committee could be made.

FLORAL COMMITTEE.—This was the finest exhibition the Society has seen at the fortnightly Tuesday Meetings, and it is most gratifying to witness the increased interest taken in these Meetings, both by the exhibitors and the Fellows, many of whom are convinced that these gatherings have quite as much, and to some more, interest than the formal great shows.

F. J. Graham, Esq., again exhibited his seedling Violet Victory; he also brought specimens of The Czar for comparison, but they were so badly grown that The Czar was scarcely recognised. The seedling must be seen better grown before it can be noticed. Messrs. Veitch again sent a very choice collection of plants, chiefly Orchids; there were twelve varieties of Lycaste Skinneri, an exhibition in itself; a pretty plant of Dendrobium glumaceum, also fine examples of Hippeastrum pardianum. A special certificate was awarded. W. Marshall, Esq., sent one of the largest and finest collections of Cattleyas ever seen, it was magnificent; the varieties Jano, Cleopatra, and Tricolor respectively received first-class certificates. A special certificate was voted for the group, and the Committee recommended that a medal be awarded for the excellent cultivation of the plants.

Mr. James Atkins, Painswick, Gloucestershire, sent a very interesting collection of hardy spring-flowering plants; among them Iris reticulata, a well-known but extremely pretty flower, also a hybrid Cyclamen—*coom album*, which was awarded a first-class certificate. Messrs. E. G. Henderson's collection contained many very pretty plants; among them an Acanthopanax with variegated leaves; Primula denticulata floribunda; Daphne alternifolia, new; Iris reticulata; Galanthus plicatus, or the Crimean Snowdrop; and two pansies of Pyrethrum Golden Feather, one of cuttings, the other seedling plants, proving that the seedlings come true, and are equal in colour to the parent plant. A special certificate was awarded. Mr. Hannan, gardener to E. B. Evans, Esq., sent a large branch of Bougainvillea spectabilis with highly coloured bracts. Mr. Cross, gardener to Lady Loasia Ashburton, brought a cut spike of Lelia elegans Turneri, very beautiful, with deep rosy purple flowers. A first-class certificate was given for it; also from the same exhibitor came a spike of Oncidium Batemanii.

Mr. William Paul sent a very extensive collection of plants in very

fine condition; also a box of cut Camellias. His Variegated Zonal Pelargoniums were extremely good specimens, and in great variety. He also exhibited some Auehas well covered with berries, some fine specimens of Erica Willmoreana, and a collection of Polyanthus which originated from the common Primrose. These flowers will be found most useful for spring decoration, and are worthy of attention, for by perseverance in their culture a great improvement may be expected. The two varieties, Waltham Primrose and Waltham White, with their circular flowers were very neat and showy. A special certificate was awarded for the Camellias, and another was given for the group of plants.

Messrs. Smith, Dulwich, brought a small collection of their Variegated Zonal Pelargoniums, and among them were some seedlings of first-rate quality. Comet, a yellow ground with broad bronze zone, was very much noticed and admired. A special certificate was awarded. Mr. Standish exhibited three seedlings of Aueha japonica—namely, quercifolia, ileifolia, and crassifolia. When larger plants these will most probably be considered worthy of notice. There seemed to be much distinctive character belonging to each. Mr. B. S. Williams, of Holloway, sent a fine collection of Orchids, containing many fine specimens—among them a fine Oncidium abortivum, the curious flowers of which give a great elegance and delicate character to the whole plant. A special certificate was awarded for the collection.

Mr. Dobson, of Isleworth, sent a large collection of Primula sinensis in every shade of colour. The plants were remarkably well grown, and densely covered with flowers. A special certificate was awarded them. Mr. Richards, gardener to Lord Londesborough, exhibited Oncidium macranthum hastigerum with large yellow flowers, marked all over with brown spots or stripes. A first-class certificate was awarded it. Mr. Moore, gardener to the Earl of Shrewsbury and Talbot, sent a collection of cut Orchids, among them a fine spike of Odontoglossum Alexandra, for which a special certificate was awarded. It was presented to Her Royal Highness the Princess of Wales. J. Day, Esq., sent some very fine Orchids, among them Odontoglossum Bluntii, O. gloriosum, and O. intermedium, which received a first class certificate; also Cattleya Mossiae superbiissima, a fine purplish rose flower. A special certificate was awarded the collection. Major T. Clarke brought some cut specimens of flowers, Orchids and others, among them Pelargonium semperflorens, a very pretty delicate flower—a special certificate was awarded. Messrs. Osborne, Fulham, exhibited a pretty group of well-grown plants. A Rhododendron covered with flowers was very beautiful, and the collection of spring flowers, exhibited in a basket of moss, was much admired. A special certificate was awarded. Mr. Dean, Ealing, brought a plant of the dark-red flowering Primrose, not unlike many other seedlings.

GENERAL MEETING.—W. Wilson Saunders, Esq., F.R.S., in the chair. After the usual formal business, and the election of eight new Fellows, the Rev. M. J. Berkeley proceeded to notice some of the most remarkable subjects exhibited.

Mr. Berkeley said that at the last meeting he had directed attention to an extremely pretty Gongora, which was unnamed, and he had since found it to be a variety of Gongora maculata, described by Dr. Lindley in the "Botanical Register" in 1847 under the name of G. bufonia leucochila, but at the end of the same volume identified as a mere variety of G. maculata, being there named G. maculata tricolor. There were also at the same meeting two or three Thuja—viz., T. Zuccarimiana, T. fakata, and Juniperus japonica, about which his opinion was asked. The other evening he was at the Linnean Society's, and there he saw a collection from Dr. Hooker, and in it he could find no trace of such a plant as T. Zuccarimiana. Juniperus japonica he believed to be the same as J. chinensis.

With reference to the beautiful collection of Cattleyas from Mr. Marshall, the whole he believed were varieties of Cattleya Warscewiczii. He next directed attention to Dendrobium glumaceum, with a spike resembling that of a Grass, and to the fine example of Oncidium macranthum hastigerum, from Lord Londesborough's gardens at Grimstone Park, and Mr. Pierce had informed him he had found the same variety some years ago in the neighbourhood of Quito. The white Cyclamen cornu and Iris reticulata, from Mr. Atkins, were then mentioned, also the Crimean Snowdrop, to the beauty of which, however, the specimens sent did not do justice. After noticing the very elegant flowers of Hottelia japonica, plants of which were shown by Messrs. Veitch, Mr. Berkeley remarked of Primula denticulata floribunda, shown by Messrs. E. G. Henderson, that the size of the trusses depended on the lateral fusion of the footstalks. A plant with very ornamental leaves 14 inches long and 9 inches wide, and supposed to be a Begonia, exhibited by Mr. Wilson Saunders, was then referred to as being one of the most interesting plants in the room, and, though nearly allied to the Begonias, probably belonging to a distinct genus. With regard to Skimmia odoratissima, of which a plant was also shown, Mr. Standish had informed him that in raising plants from seed he had found that the male plants were identical with odoratissima, and the female with oblata, and the conclusion, therefore, is that the two are merely the different sexes of the same species. Mr. Berkeley then brought under notice some cut Rhododendron flowers, produced in the open air in Denbighshire, and which had been sent by a friend of his, with whom on the late the Rhododendrons were a sheet of beautiful flowers, whilst at Abercrombie, on the mountain limestone, they failed almost entirely. At the last Meeting

he had read a letter respecting the damage done to the woods at Adare Manor, in Ireland, by Lichens. People naturally wish to know how it is that Lichens do so much injury to trees. Their mycelium does not enter much into the tissues, or when it does, seems to be on extremely good terms with them. In Cinchonas, for instance, which were so attacked, the medicinal properties of the bark were stronger. The popular opinion was that Lichens injured trees by feeding on their sap, and Shakespeare, in the Comedy of Errors, has

"Usurping ivy, brier, or idle moss,
Who, all for want of pruning, with intrusion
Infect thy sap, and live on thy confusion,"

by idle moss meaning Lichens. For his own part he believed that though, like some parasites, they obtained certain substances from the bark, the injury which they did was chiefly by their depriving the plants of the access of air and light.

Another subject which he wished to mention was that at the last Meeting he was shown a piece of wood affected, it was thought, by dry rot. Now, there were two forms of dry rot, the one produced by a fungus, Merulius lachrymans, the other not; and in the one case there was a remedy, in the other none. The fungus could be destroyed, or rather its progress checked for some years, by corrosive sublimate, although decay, as in the case of kyani-ed timber and railway sleepers, would ultimately take place. The other form of dry rot was a kind of slow combustion, called eremacausis, in which oxygen combines with the combustible portion of the wood, namely hydrogen and carbon. Now, taking wood to consist of thirty-six equivalents of carbon, twenty-two of hydrogen, and the same of oxygen (C₃₆, H₂₂, O₂₂), the withdrawal of one equivalent of carbon and two equivalents of oxygen for the formation of carbonic acid, and of one equivalent of oxygen and one equivalent of hydrogen, forming water, would reduce the proportion borne by the oxygen and hydrogen to the carbon; and if the withdrawal of the last two elements were continued, it was a question whether carbon only would not be left. After referring in connection with this subject to the recent discovery of a new acid, called xylic acid, in the decayed matter of the trunks of trees, Mr. Berkeley read an account of some trees on a wall covered with a galvanised wire trellis, and in which it was stated that the shoots appeared scorched, and were killed where they came in contact with the wire. One explanation of this occurrence might be the variations in the temperature of the wire at different times; another, that galvanised wire being rough, would, no doubt, fret the shoots where they touched it, and the expansion and contraction of the wire would alone be a constant cause of this fretting. In confirmation of the latter view, it was mentioned that at Chiswick, where smooth, painted wire is used the trees were not injured. After noticing a fine branch of Aueha japonica covered with berries, sent by E. A. Brande, Esq., Sulhamstead House, Turnham Green, as justifying the prophecies made on the introduction of the male plant, Mr. Berkeley directed attention to some exceedingly well-executed water-colour drawings of plants, made by Mr. F. W. Burbidge, one of the Chiswick students, and which showed that the Society had taken an important step in the right direction when they had determined on admitting students at the Chiswick garden.

Mr. Wilson Saunders said that before the Meeting closed he wished to draw attention to Sempervivum holochrysum, on account of its handsome spike of yellow flowers being so showy at this time of year. The plant was of very easy culture—in fact, it was almost impossible to kill it, in proof of which he said he had put a stem of it aside to dry for his museum, and though it dwinded for awhile it again grew after several months. There were five or six other Sempervivums, which came from the Canary Islands, and he would be happy to give to the Fellows cuttings of the one his gardener had shown. Referring, then, to the fine collection of Cattleyas exhibited by Mr. Wilson, Mr. Marshall's gardener, he said they were all imported plants, and though it was not known why they produced such different colours in their native country, it was necessary to be very careful of attributing anything specific to colour, for it was very unsafe to do so. All who were present at the Meeting must feel very much indebted to Mr. Marshall for bringing such a collection; but however different the flowers were, he (Mr. Saunders) thought he could discover five or six so-called species, which would have to be cut out of the list of species. After remarking that a peculiar and fine tint of yellow had made its appearance among variegated plants lately, and that he could not tell why we were getting this peculiar colour, he said that he had now to direct attention to the fact that the Council, in their desire to promote scientific horticulture, had, in addition to the Fruit and Floral Committees, both of which did their work admirably, resolved on having a third Committee, the objects of which have already been fully set forth in a previous column. By the next Meeting (March 17th), Mr. Saunders hoped that the organisation of the Committee would be sufficiently advanced for the names of the members to be announced. It was not intended that they should exclusively consist of Fellows of the Society.

Major Trevor Clarke said there were two Lichens growing on the front of his house, one of which corrodes the stone, whilst the other, if scraped off, leaves the stone intact; probably Mr. Berkeley could tell him the names.

Mr. Berkeley declared his inability to do so without examining them, but named two which were likely to be found in such a position.

Major Trevor Clarke having offered a few bulbs of Calanthe vestita for distribution, the proceedings came to a close.

Although not announced at the Meeting, we may add that the amount already subscribed as special prizes for the Society's Great Show at Leicester in July next, already exceeds £370.

THE ROYAL HORTICULTURAL SOCIETY AND ITS GARDENS.

I WAS at first somewhat taken with a measure proposed in your contemporary's issue of last Saturday week (*Gardeners' Chronicle*, page 181-2), to convert the greater portion of the Chiswick establishment into a "utilitarian" or market garden; but I doubt if it would do. It may be asked, Why not convert it into a nursery garden? Trees, shrubs, and plants would prove more remunerative than Apples, Gooseberries, and Peas, and therefore "in the name of common sense," as your correspondent says, why not go in for the most paying trade? This shoe, however, would manifestly pinch somewhere, and the Society would soon find out that it had put its foot into it; for, whilst your correspondent thinks that market gardening is a perfectly legitimate and praiseworthy occupation for it, he objects to the gift of a few trifling packets of seeds to the Fellows, on the ground that "it is entirely unworthy of its high character that it should compete, as it were, with nurserymen for the supply of the private gardens of the Fellows with common seeds for the kitchen or flower garden." But surely, Mr. Editor, it is equally unworthy of the Society's position that it should scramble with market gardeners, either for the supply of the tables of the Society's Fellows or of any other fellows! And therefore I fear that the market-gardening business cannot be thought of as an opening for the discharge of its "high function of teaching the art and science of horticulture by precept and example" any more than the nursery business, though the remark of your correspondent that "respectable nurserymen abound," suggests that seed and plant selling must be an uncommonly good trade.

On reconsideration, then, it appears pretty clear to me that the Society must neither grow Orchids nor Potatoes simply with a view to sale, but continue its energies (while giving a fair field and no favour both to market gardeners and nurserymen for competition with each other), to such measures as will advance the highest interests of horticulture. Nobody will object to the Society's disposing of such produce as the garden yields in the legitimate way of its work, either to Fellows or in Covent Garden Market; and I can hardly believe that our Riverses and Pauls, our Veitches, Lees, and Standishes, grudge to the Fellows the privilege of receiving a few packets of seeds annually, because a few pounds are thereby lost to the trade. If these gentlemen think of the matter at all, they probably regard what your correspondent terms such "excessive liberality" rather in the light of an incentive to horticultural tastes, and in the long run as productive of benefit to their business. I like to have my seeds, I confess. I watch their growth, and talk of them to my friends with far greater pleasure than of those I get from Messrs. Carter; and on the same principle I prefer eating eggs laid by my own fowls, or butter made from the milk of my own cow. I look upon Chiswick, in fact, as in part my own property. I will not deny that there may be a *souperon* of a meaner motive—viz., the pleasure to be derived from getting my money back again; and I am inclined to think that with many of the Fellows this motive is sufficiently strong to induce them forcibly to resist such a curtailment of their privileges as he recommends.—COMMON SENSE.

P.S.—I have always told my friends that the Society's "Journal" was very learned; that it is edited by Mr. Berkeley, who, like the Society, has a European reputation. Am I right, or ought we to be ashamed of it, as the correspondent of the *Gardeners' Chronicle* states? Please tell me.

[Let us charitably suppose that the writer has failed to distinguish between the Society's "Journal" and the *ephemeris* issued periodically from the office of the Society. That any person should be "ashamed" of what emanates from Mr. Berkeley's pen, or editorial supervision, is to acknowledge himself incompetent to form a judgment.]

ORNAMENTAL AND FLOWERING SHRUBS.

(Continued from page 166.)

COTONEASTER MICROPHYLLA.—Leaves small, dark green; procumbent habit; flowers white, in summer, succeeded by a profusion of red berries. Very ornamental, suitable for covering walls, rockwork, or banks, and for plantations not very much shaded.

Cotoneaster luxifolia, **C. rotundifolia**, and **C. thymifolia** are similar and desirable species, 2 to 5 feet. Seeds and layers. **C. microphylla**, **C. buxifolia**, **C. thymifolia**, and **C. Wheeleri** form drooping heads when grafted on the *Crataegus*.

COTONEASTER SIMMONSI.—Leaves much larger than **C. microphylla**; habit erect; flowers white, in summer, succeeded by a profusion of large red berries. Very ornamental and desirable. 5 feet. Seeds.

CRATEGUS PYRACANTHA.—Leaves entire, of a deep green; flowers white, in large corymbs, succeeded by bright red berries or fruit, having a fine effect in autumn. Very suitable for covering walls. 6 to 10 feet. Seeds and layers.

CISTUS PURPUREUS.—Flowers large, reddish purple, in summer; shoots reddish, giving the plant a handsome appearance. It is a hardy and very ornamental shrub, and so are **C. populifolius**, **C. ladani-folius maculatus**, **C. laurifolius**, **C. corbariensis**, **C. algarvensis**, and **C. villosus**, but except in dry warm soils and situations they do not succeed. Limestone soil is most suitable. Height 3 to 4 feet. Seeds sown in heat in light soil, and grown on in a cold frame. Propagation is likewise effected by cuttings of the half-ripened wood in sand in a cold frame or under a hand-glass, with shade from bright sun; also by layers.

DESFONTAINEA SPINOSA.—Leaves holly-like, of a bright green; flowers trumpet-shaped, large, red, and very handsome. Cuttings. A very desirable shrub of holly-like erect habit.

ESCALLONIA MACRANTHA.—Leaves oblong, deep green, shining; flowers reddish purple. Altogether a splendid shrub, but needs a warm situation or a wall. Height 6 to 8 feet. Propagated by cuttings of the ripened young wood in heat. The flowers are produced in autumn.

ESCALLONIA RUBRA.—Leaves shining; flowers red, pendulous, very fine, in autumn or late in summer. Warm situation or wall. 6 feet. Cuttings.

ESCALLONIA FLOERIBUNDA.—Leaves oblong, shining, very ornamental; flowers white and numerous, late in summer and in autumn. In most situations requires a south wall. Height 6 to 10 feet. Cuttings.

GAIERIA ELLIPTICA.—Leaves shining, deep green; flowers greenish yellow, numerous, and produced in long, drooping catkins, in winter. Height 6 to 8 feet. Cuttings of the half-ripened shoots under a frame or hand-glass. Requires a warm situation, or protection in winter in cold situations. A very ornamental shrub.

HYPERICUM CALYCINUM.—Leaves dark green, ovate, large, dotted here and there with transparent dots; large yellow flowers, produced in summer. Suitable for planting in shade, making a fine covering under large trees. Division of the roots, which creep. It does not exceed 1 foot in height.

ILEX AQUIFOLIUM, the common Holly, is very suitable for planting in shade, and very ornamental everywhere, making the very best of hedge plants, and bearing cutting well. **I. angustifolia**, **crassifolia**, **myrsinifolia**, and **ciliata** have small leaves; **I. balcanica**, **Hodginsii**, **glabra**, **altaclaren-sis**, **maderensis**, **Shepherdii**, and **nigrescens**, with broad leaves, are very fine sorts. **I. Donningtonensis** is the best of the long-leaved kinds, and is very distinct. **I. tarago** and **I. latifolia** have very large leaves, nearly if not quite as large as those of the common Laurel, but they are rather tender, and should have sheltered situations. The Weeping Holly is very ornamental, and the Silver-variegated Weeping variety is equally desirable, forming a very handsome head. There are many varieties of variegated Hollies which may have their admirers, but the majority of them are very dull in their markings. The Gold and Silver-margined are the most distinct. Hollies are very handsome; standards or clear straight stems from 3 to 6 feet in height, and with well-shaped heads, are very fine, and pyramids are so easily kept in shape by cutting before growth takes place as to be very desirable for architectural and terrace gardens. Grafting on the common Holly.—G. ALLEY.

(To be continued.)

THE MISTLETOE.

ALLOW me to say a few words as to the trees I have seen the Mistletoe growing on, and the localities in which it is found.

Hampshire seems to be a county in which it is met with in large quantities, and the Lime tree appears to be most favourable for its growth. At Swathling Grange, near Southampton, there are some noble Lime trees, and they are literally covered with Mistletoe, and some bunches, I imagine, are quite 5 feet in diameter. Another place where it used to be growing abundantly was in an Apple orchard belonging to, I think, the Dean of Winchester, situated at Bishopstoke, six miles from Southampton. Some of the Apple trees were heavily laden with it, and, perhaps, are so now. At Stratton Park we had an old Maple tree, on which it grew in large quantities, and I have seen it growing on the Lime tree near Earsham Hall, Bungay, Suffolk, but not to the same extent as at the places before named. When at Gillingham Hall I inserted some berries in a cut in the bark of an Apple tree. The seed germinated, and the plant grew about 2 inches, when, by accident it was knocked off. I have also seen the Mistletoe as a standard, and a very pretty standard it made. It was in the pleasure grounds at Eagle

House, Clapham, Surrey. I believe my friend Mr. Freeman (the gardener there), told me it was on an Apple stem, about 3 feet 6 inches or 4 feet in height, straight and clean, and the head of Mistletoe healthy and compact.—T. BATTERS, *Gardener to C. Castleman, Esq., Glasshazes, Lyndhurst.*

TRELLIS ON A WALL.

A PLAN which is followed by our gardener, and which I have never before seen, for fixing laths to a wall for training trees on, is so firm, easy, and good, that I am sure many of the readers of THE JOURNAL OF HORTICULTURE will be glad to know about it.

The nails used are merely pieces of soft iron of the shape represented in fig. 1, and which can be made by any worker in



Fig. 1.

iron. The size for laths of the ordinary thickness used on walls is 4½ inches long, and half an inch wide at the widest part, and the iron is about one-eighth of an inch thick. The tool for fixing them is a kind of key, made of steel, of which I give a side and end view (fig. 2). It is about 8 inches long, and 3 inches round at the thickest part.



Fig. 2.

The size of the nails and that of the holes in the key agree; the end of the nail is inserted in the end hole of the key, and driven into the mortar by striking the other end of the key with a hammer. A hole of the requisite size is then made through the lath with a gimlet. The nail in the wall is put through it, and the projecting portion firmly clenched. A long lath will not require more than two fastenings. The plan is known to few; but in one garden near here there are laths so fixed which have been in use for forty years.—E. WATTS.

WORK FOR THE WEEK.

KITCHEN GARDEN.

If the successional crops are sown at the first favourable opportunity the permanent ones will not suffer much by the delay of a week or ten days if the soil is not in a fit state; and if time is taken to do the work in a proper manner it may prevent loss of time and disappointment afterwards. *Asparagus*, where this is forced regularly a few rows must be sown annually to keep up the supply. Any time this month will do for the sowing. *Artichokes*, it is a good plan to plant out, every year, during the month, a few rows of suckers; these will produce after the permanent ones have done bearing. An equal number of the older stools may then be destroyed annually. Plant them in single rows. *Horse-radish*, this should be treated exactly like the Artichoke, by planting a few rows annually, and trenching up the oldest bed, picking up every morsel of the roots. Plant late Potatoes rather thickly in the bed, in order to destroy what remains of the roots. *Peas and Beans*, it is a good plan to sow early and late sorts at the same time, to prolong the succession; but rather sow often than a large breadth at one time—say every other week till the end of April. The forced Peas should be planted out when all danger of severe frost is over. *Rhubarb*, this should be planted without loss of time, where new plantations are wanted or any new sort is to be tried. Do not trust to seedlings from superior sorts, they sport as much as Broccoli. *Sea-kale*, either sow a few rows, or plant cuttings from the crowns.

FRUIT GARDEN.

The chief business here is to provide coverings for the Peach and Apricot trees, and any of these which are not yet nailed must be attended to forthwith. Whatever covering is used it should be made to lift up during the daytime. More harm is often done by close-fixed coverings than when the trees are not protected at all.

FLOWER GARDEN.

If it is not decided with what plants the beds in the flower garden are to be planted this season, the sooner the decision is made the better. Autumn-sown annuals may now be removed to their blooming places, planting three or five in a patch according to the kind and size. For beds intended to contain

half-hardy plants, annuals planted in a line round the outside, and pegged or clipped into shape, form a neat and gay edging in the early part of the season, and leave the centre of the beds to be thickly planted with such plants as are intended for summer and autumn decoration. Californian annuals, such as *Clarkias*, *Collinsias*, *Leptosiphons*, *Nemophilas*, &c., sown now will bloom almost as soon as those sown in autumn; indeed, it is advisable to sow a few at the time of planting, as they fill up all vacancies, and prolong the season of bloom. Herbaceous borders, if not dressed over in the autumn, must be attended to immediately, and either fresh compost or manure must be afforded all plants which are weakly. Proceed with the planting-out of biennials of all kinds, and prepare a good-sized piece of ground for a sowing of *Anemone coronaria*, *hortensis*, and *vitifolia*. *Anemones* delight in a strong rich soil, and a rather shady situation in summer. Sow the seed, after well rubbing it in sand, in shallow drills 9 inches apart, and cover with rich soil from the compost yard. A sowing of Ten-week Stocks must also be made on a warm sunny border; cover with litter or mats at night until the seeds begin to vegetate. Sow, likewise, a general assortment of annuals for transplanting to fill up vacancies. *Auricula* seed may now be sown; the best compost is sandy peat and leaf soil. Shallow boxes or pans should be filled nearly full, and watered well to make the soil settle; the seed may then be thinly sown on the surface and covered very slightly. The blooms are now rising; take care that the trusses be not drawn by keeping the lights on too much. Still keep a sharp look-out for snails among the *Polyanthuses*. With a small hand-fork keep the surface of the bed loose, taking care not to disturb the fibres; if grown in pots the soil must be occasionally stirred, keeping them moderately moist. If the fine days last week were taken advantage of, many *Ranunculus* beds will have been planted; if not, the sooner the better. The beds of *Tulips* must be carefully gone over, and the cracks filled up, putting the soil firmly round the neck or rising leaves. *Carnations* are now beginning to grow, and diseased plants which have struggled through the winter thus far are dying off. All vacancies in the beds of *Pinks* must now be made up, and the soil kept in a loose friable state on the surface. Look well to trapping wireworms and other enemies.

GREENHOUSE AND CONSERVATORY.

As a large number of spring-flowering plants are now coming into bloom in the conservatory, more air must be admitted; but those recently removed from the forcing pit, and all stove plants brought into bloom, must be arranged in the warmest part of the house. Fresh beds of soil should now be made for climbers that are to be planted this season, and a portion of the old soil removed from such established ones as are known to quickly exhaust the soil, replacing it with a fresh supply. This will be a good opportunity to cut or root-prune such climbers as have rambled over the houses without flowering much for the last year or two; and where duplicates exist this is a suitable time to cut down some of them to the ground, in order to prolong their flowering season. This is the best plan to adopt with plants infested with the scale or other troublesome insects, if care is taken to clean the remaining portion of the plants, and the pillars or trellises to which they have been trained. It is now a good time to propagate greenhouse plants by cuttings where a gentle bottom heat can be maintained. Great attention is required to keep these plants from growing too fast at the present season; the least confinement is injurious to many tribes of woody plants in this department. The tops of young plants in free growth ought occasionally to be cut off, in order to make them good bushy specimens, even if their bloom is sacrificed at this stage.

PITS AND FRAMES.

Here the work need not be pointed out. The means of providing room after the plants are potted is the greatest difficulty in most gardens. Glazed calico is sometimes used to protect plants when potted-off. Choice annuals, such as *Brachycome iberidifolia*, *Viscaria oculata*, *Mesembryanthemum tricolor*, *Portulacas*, *Clintonias*, and the like, should always be potted-off as soon as they are sufficiently large to handle, and afterwards be placed in a warm moist atmosphere, with plenty of air in mild weather, until they are properly established.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Just before the rains of the 29th ult. we took up most of our Celery, as we wanted the ground for Onions and other crops.

We took the Celery up with good bafis, watered it at the bottom, and banked it up rather closely on a level bed of sifted furnace ashes. We have thus kept it in good condition in a shady place until April or May, and it requires little trouble to take it for use. The only objection to the plan is, that unless the Celery is in a walled garden it must be protected with wire netting from marauders.

In connection with this subject we may state that wire netting, 2 feet in height, placed against an open fence of Ivy, secured our Cabbage plants from rabbits until lately; but we now find we ought to have had the wire farther from the fence. A number of fine plants have been cut up, and on close inspection we discovered that the rabbits had mounted the Ivy fence, and from thence jumped over the wire. When people want to be very sure, a 30-inch fence would do better than a 24-inch one, as the following fact will show. Outside the garden a heap of rotten leaf mould had been piled against a low wall. The highest part of the mould was 20 inches from the coping; yet to that coping the rabbits had sprung, and then dropped down a depth of nearly 6 feet inside, as proved by the excrements and hair left behind them, and the marks of their feet and bodies in both positions. We have seen a hare spring, when pressed, a height of 9 feet; and we have seen rabbits jump from a good elevation; but we never before knew them to get up and over a wall nearly 2 feet above where they could stand.

Planted early Potatoes at the bases of walls, and placed others where there was a little heat to sprout them an inch or two. Planted the pit with the strong plants of Cucumbers referred to last week, and Saturday being a wet day, pricked-off a lot of Celery into shallow boxes, which we will place in the hotbeds or Cucumber pit. Of course, before planting the Cucumbers, we had the soil well warmed first.

Avoiding checks of all kinds is the best safeguard against the attacks of insects, and consequent premature decay. Farther on in the season such care would be less necessary; but at present every moving of the Cucumbers from the dung frame, whether for potting or final planting, was done by placing the plants as quickly as possible in a close box during the little time taken in the transition from one place to another. We mention this not to remind experienced professional gardeners, but as a hint to amateurs and beginners to beware of checks. We have known many failures, and therefore as lessening enthusiasm worse than mere disappointments, in the case of Cucumbers, when, after good plants were obtained from a gentleman's garden, and carefully carried home with many wrappings about them, they were unpacked in the open air, allowed to remain there for some minutes, and then, perhaps, turned out and planted at once in soil considerably colder than that they were used to. All such plants should, if possible, be unpacked in the place they are intended to grow in; and in general it will be as well to water and syringe with water at about 80° or 90°, and leave the plants turned out of their pots for a day at least, and considerably longer if the soil is not warm enough. Such delay and care will be anything but time lost.

Simple as this caretaking is, it is often considered as a matter of no moment. Some seasons ago, in a cold day in the beginning of March, we accidentally noticed in a rather close cold shed thirty or forty fine Cucumber plants, just shifted into 5-inch pots, brought from a hot place, and intended to go in a fortnight into a Cucumber house. We were told the plants had been there more than an hour, as the man who was potting them had been obliged to leave them for another job. We were not surprised to learn that these plants never answered the results expected from them, and that another set of plants had to be introduced early in summer. We could see at a glance how it was. The worker was no doubt a very systematic man. A certain number of plants had to be potted, and potted in this shed as most likely the most suitable place to do the work in; and therefore, on system, all the plants must first be carried out, and then all must be potted, and the group well looked at before any were returned. This would have been the case if there had been no calling-away to attend to the wishes of the lady or anything else. This over-systematising, so as to have a potting shed full of potted plants, is a very favourite system with many young cultivators. It may proceed from the otherwise laudable desire that their work should be seen. Now we think that the better, if less showy, system as respects the Cucumbers referred to, would have been more attention to some little matters; and we specify them for the use of beginners, merely presuming that the plants are

in a frame or pit, where there is no room to pot them. Before potting, have suitable soil properly warmed over a furnace or otherwise; pots cleaned, drained, and also warmed; have warm water also in readiness. Then bring only a few plants out at a time, shift, or do what is wanted, and afterwards as quickly as possible take them back to their warm place, and bring out a few more, and thus go on. If on an emergency the work must be left, the plants can be so replaced as to receive no injury.

We might tell a similar tale of hundreds and thousands of tender cuttings inserted with much care in February or March, and yielding but a poor return in rooted plants, and this chiefly because the danger of checks was considered to be of no importance. Now the only secret in striking a growing cutting, is just to keep it growing, and never allow it to have a check or a flagged leaf. But for the courtesy of the affair, and the pleasure it yielded, we have often thought it was labour thrown away to take off cuttings, and give them to people who unceremoniously stuffed them in their pockets like so many little bundles of straw. Some years ago we noticed a nice hotbed filled with cutting pots, but mostly empty, or covered with the dead and dying cuttings, and we learned something of the reason. About two hundred varieties were thus to be largely increased for bedding purposes, and the cuttings were taken as they were growing rather tender, in a house ranging from 60° to 65°. On the system referred to, all the cuttings were taken off first, and laid down with their little tally to each kind, on a bench in a cool shed. Then pots partly prepared had to be made ready, then the cuttings had all to be made, and when made all had to be inserted before being placed in the striking bed, and thus the little tender cuttings were shrivelled, starved, and almost dead before they were placed in suitable quarters. A less showy, but a far more suitable system would have been to do a few pots at a time, and put the cuttings in their place at once. Such few pots could easily be filled in the house where the cuttings were taken from, if no warm place could be obtained.

FRUIT GARDEN.

Pruned out of doors when we had an opportunity. Placed more Strawberry plants in pits and houses. We shall not be so early this year as usual, as we have not begun so early. The most forward are showing well. One of the secrets of success, provided the plants were fair for strength and ripeness last autumn, is to avoid extremes of temperature, and commence with a low temperature, and rise gradually. A heat of 55° or 60° is quite as high as the plants ought to have until in bloom, and the fruit set; from 45° to 50° will be high enough to begin with. For want of tree leaves we could not start them in frames as we wished to do. This is an excellent plan for starting the plants, provided the heat is mild, and the roots do not find their way through the bottoms of the pots.

Our stock of Strawberry plants is under the protection of the orchard houses just now; but they received much more wet in the autumn and in the beginning of the winter than we liked. However, we do not think the wet, nor the frost which they had up to nearly Christmas, has done them much harm. The pots stood on the hard ground unplunged, and in some of the severe frosts they were covered all over with litter for a week. On turning out a number of pots before housing them, the roots were all as they ought to be—fresh, growing, and clinging to the sides of the pot. This would not have been the case but for the litter. We think Mr. Rivers some time ago, after the remarkably severe winter of 1860-61, wrote about how little litter would preserve plants from injury if close to the ground. The above fact as respects Strawberry plants in pots, and many other instances, confirm his statements. Nevertheless, if we had it in our power, we would have Strawberry pots for forcing under protection from frost, rain, and snow by the middle of October.

Regulated Vines breaking, thinned-out superfluous shoots from others more forward; gave heat and air as lately stated. Thinned shoots in the Peach house, watered borders; potted Peas, and took them into it for a fortnight to establish them before removing them to the orchard house. Potted Melons in larger pots, as the bed is not ready for want of material, and we do not wish to have the plants checked. Finished whitewashing the orchard house; and on the 23th, as the day was wet, painted the most of the trees with lime, soot, and sulphur, merely as a precaution. Previously the weather was so fine for out-door work that we did not like to do this before, though this last house would have been as well if thus treated a fortnight ago. The first house, which we bring on earlier, was

finished some time since. If we have a wet day next week we shall scrape over the floor between the pots, so as to remove the surface, though only for a quarter of an inch in depth. We do this by way of precaution, though we had scarcely the appearance of an insect there last season. We shall then prick over the ground with a fork, chiefly to receive water, but not to loosen the soil, except the mere surface. We shall add a little rotten dung, and then water with manure water, doing 2 or 3 feet in width at a time, so that the trees against the back wall may not have too much water at once. The trees in pots being rather dry, watered them, but not heavily, to encourage the fibres to come to the top compost. In another year, if we keep these trees in pots, we must try and shift them early in autumn, as they have been a number of years in the same pots. We have proved what may be done in this way, and a pretty amusement it is for amateurs and ladies. In practice, when a gardener's hands are full, the watering which these trees in pots require is a great drawback; but it is very pretty to see a number of such trees in pots healthy and well loaded. The labour of watering in summer is lessened by repeated mulchings.

Before the blossom opens our aim now is to retard the opening, and thus be more independent of the weather if we should have a frosty March. To help to retard, in some very bright days we spattered the roof outside with water merely whitened with whiting. The syringe in the hands of a man who can use it, will do this for the roof of a large house sooner than we can write about the doing of it. In favourable weather we give all the ventilation we can day and night, shutting up in nights likely to be stormy. We think it is a mistake to hurry on these unheated houses in February; but even if they should be rather forward by giving less air than we have done, the blossom will suffer little from cold so long as the air inside is dry and rather still. We prefer, however, to keep the trees back now, and to help them on by shutting up earlier after the fruit is set. In different houses there will be thus successions without artificial heat, as the house earliest one season will come earlier every season afterwards.

ORNAMENTAL DEPARTMENT.

In addition to what was stated last week about potting plants, we would like to secure a number of Pink and Perpetual Carnation cuttings for next winter; the latter if struck and potted early requiring no forcing to bloom in winter, and the former but little. We have put in a good batch of Verbena cuttings, and would have in cuttings of many other plants could we empty our places of the plants that we are yet afraid to trust with protection without glass. When a single little wooden box, in which Pelargonium cuttings were inserted, now holds from fifty to a hundred fine plants, the potting of thousands and transferring them as stated lately to a Vine border covered with old sashes, makes but little room in the place where the handy boxes stood.

Pricked-off numbers of Lobelias in shallow boxes about 2½ inches deep. These little boxes, made for very little in bad weather, where pieces of wood can be obtained, or old boxes, which are often plentiful and fit for little else but firewood, are better than pans square or round, as they are so much lighter and less likely to be broken, and take up no time in preparing them for such purposes like pots. Then, for pricking-out such little plants, as the bottoms and the sides do not fit over-closely together, no holes for drainage are required. A little rough leaf mould is spread along the bottom, fresh sandy soil rather rough over that, and then a surface of lighter finer soil with a little fine leaf mould in it, pressed down, and pricked all over with the little plants. When well established these can be taken out in lumps with all the roots near at home. Preparing such boxes is a good job for a wet day. To secure neatness and keep fungus away, we generally whitewash them with quicklime, outside and inside. A large number of such plants will be stowed away in our Cucumber beds and frames; not but we would rather be without them, and let the Cucumbers have all to themselves; but, then, if we have them at all it must be by a cramming process. It is important, however, to prevent the plants crammed-in injuring those intended for a more permanent residence.

We intended making some remarks on propagation, but must defer them, as those seeking the information will not be able to begin until after the middle of the month. Meanwhile we would advise a sweet heat in the top of the bed, if bed is to be used, and a good-sized cutting instead of two small ones. Thus, though you may split Verbena stems and make a cutting of almost every joint, or even two cuttings, we advise that each

cutting should have at least two joints, and if a terminal or side shoot, which we like best, that the cutting should be from 1½ to 2 inches in length. Beginners will find that the best.

With regard to sowing tender flower seeds, referred to last week, for all small seeds sown in pots, it is a good plan to fill the pots one-quarter full with drainage, one-quarter more of rough materials, then finer soil, and finer still next the surface, that surface being nearly an inch below the rim. Water well, and leave for the best part of twenty-four hours, then level the surface, sow, sprinkle with a little sand, press gently, take to the bed or warm place, cover with a square of glass, and on that place paper or any other covering, and in general little watering will be wanted until the seedlings appear. If glass is not at hand in little squares to cover the pots, covering all the pots with a newspaper or a cloth until the seedlings appear, so as to keep in moisture, will be safer in such a case than using the watering pot. When that is essential before or after the seeds appear, use no rose, but sail the surface by pouring the water on a piece of tile or crock. Thousands of such little seedlings are ruined from watering overhead with the rose of a pot, however fine the rose may be.—R. F.

COVENT GARDEN MARKET.—MARCH 4.

Our supplies are a full average, and owing to the fine open weather are much better than they usually are at this period of the year. Continental produce is rather lower in price, but home-grown articles are at last week's quotations.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	3	0	0	5	Melons..... each	0	0	0	0
Apricots doz.	0	0	0	0	Nectarines..... doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges..... 100	3	0	7	0
Chestnuts..... bush.	8	0	11	0	Peaches..... doz.	0	0	0	0
Currants..... ½ sieve	0	0	0	0	Pears (dessert) .. doz.	4	0	8	0
Black do.	0	0	0	0	Pine Apples..... lb.	6	0	10	0
Figs doz.	0	0	0	0	Plums ½ sieve	0	0	0	0
Filberts..... lb.	1	0	0	0	Quinces doz.	0	0	0	0
Cobs lb.	1	0	0	0	Raspberries..... lb.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Strawberries.. per oz.	3	0	0	0
Grapes, Hothouse.. lb.	8	0	12	0	Walnuts..... bush.	10	0	18	0
Lemons..... 100	8	0	12	0	do. per 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes..... doz.	3	0	4	0	Leeks bunch	0	3	0	0
Asparagus..... 100	7	0	20	0	Lettuce.... per score	1	0	1	6
Beans, Kidney..... 100	0	0	3	0	Mushrooms..... pottle	1	0	2	0
Beet, Red..... doz.	2	0	3	0	Must.& Cress, punnet	0	2	0	0
Broccoli..... bundle	0	6	1	6	Onions..... per bushel	3	0	5	0
Brns. Sprouts ½ sieve	2	0	2	6	Parsley..... per sieve	4	0	5	0
Cabbage..... doz.	1	0	1	6	Parsnips..... doz.	0	9	1	0
Capsicums..... 100	0	0	0	0	Potatoes..... bushel	4	6	5	6
Carrots..... bunch	0	6	0	8	Kidney do.	4	0	6	0
Cauliflower..... doz.	3	0	6	0	Radishes doz. bunches	1	0	1	6
Celery bundle	1	6	2	0	Rhubarb..... bundle	0	9	1	0
Cucumbers..... each	3	0	4	0	Savoy..... doz.	1	0	2	0
Endive..... doz.	1	0	0	0	Sea-kale..... basket	2	0	8	0
Fennel..... bunch	0	3	0	0	Shallots..... lb.	0	8	0	0
Garlic..... lb.	0	8	0	0	Spinach..... bushel	2	0	4	0
Herbs bunch	0	3	0	0	Tomatoes..... per doz.	0	0	0	0
Horseradish .. bundle	2	6	4	0	Turnips bunch	0	4	0	6

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

BOOKS (H. G. C.).—"The Fern Manual" can be had free by post from our office if you enclose 5s. 4d. with your address. It contains directions for cultivating Ferns in all situations.

RHUBARB FOR MEDICINE (*Rusticus*).—The common garden varieties do not yield the root known as Turkey Rhubarb, and used in medicine. The following extract is from Hogg's "Vegetable Kingdom":—"It is generally believed that *R. palmatum*, undulatum, Rhipidontium, and australe are those from which the commercial supply is obtained. Rhubarb is produced abundantly in the elevated lands of Tartary, Chinese Tartary, Thibet, and Ehotan. It is not cultivated, but springs up spontaneously, wherever the seed has been distributed in places favourable for germination. The root is not considered fit for use till it is six years old, when it is dug up twice a year—in Tartary in spring and autumn, and in China only in winter. When it is taken up, the bark is removed, the root cut in pieces, with holes through them, and hung up to dry upon cords about the tents, or on the horns of sheep."

BRIDGEWATER TILES.—“*An Irish Subscriber*” will be obliged if “*A Somersetshire Parson*” will mention where the “*Bridgewater tiles*” (which he recommends in his article “*Wall Coping*”), are to be procured, and what is their cost; also if they could be obtained at any leading seaport town, and where.

EGYPTIAN ARUM.—“*F. B. B.*” wishes to know under what circumstances the Egyptian Arum attains its largest size in this country. In New Zealand, he adds, that it will, during the summer, from one plant become a mass 3 feet through. He likewise states that between Warwickshire and Worcestershire there are fields of Snowdrops. This is not uncommon where they have been long established.

RUNNER KIDNEY BEAN (*Lansdowne, Worcester*).—Our correspondent had a variety called “*Zebra*,” the seeds being light-coloured, striped with black, and the pods 10 inches long; he has lost his stock, and wishes to know where he can procure seed.

VINES (*An Irish Subscriber*).—Neither of the Vines you mention is suitable for a cylinder vine. Royal Ascut would do in a ground vine. The following are all adapted for cylinders:—*White*: Early White Malvasia, Pitunston White Cluster, Royal Muscadine, Stillward's Sweetwater Early Summer Frontignan, and Graham's Muscat Muscadine. *Black*: Black Prince, Black Hambargh, Purple Footainbleau, Espiran, Ingram's Prolific Muscat, Jura Frontignan.

DATES OF INTRODUCTION (*L. M. K.*).—We really cannot afford either time or space to detail the dates of introduction of twenty-five Conifers. If you refer to Loudon's “*Flortus Britanncus*,” you will find the dates mentioned.

FRUIT TREES ON NORTH WALL (*D. Shepherd's House*).—The Morello Cherry, and Thompson's and the Red Doyenne Pears, will ripen on your almost sunless wall.

TRAINING NAILS (*G. V., Devonshire*).—We do not know where Hill's Permanent Tie Nails can be procured. Eyed nails for training must be put in where and when they are required. There is no arbitrary distance.

EMPLOYMENT IN CHISWICK GARDEN (*A. B.*).—Write to Mr. Barron, Royal Horticultural Society's Garden, Chiswick, W.

SOWING SCOTCH FIR (*St. George*).—The seeds should be sown early in March in light sandy soil, and covered lightly with fine soil. You have, probably, covered the seeds too deeply, which may account for their not vegetating; but very likely they were not good. Try covering less deeply with soil.

PRUNING DWARF HYBRID PERPETUAL ROSES (*Agnes*).—“The advice to cut down your vigorous-growing Manetti-stocked Roses to 8 inches or 1 foot, is not good. You will only produce more vigorous growth and blindness. As your Roses bloomed well last year, and as you do not speak of blindness, thin-out the small wood, cut-in to a good eye the side wood, and cut the main branches, whether they were blind or not last year, to a good eye at their summits. My plants of *Acidalia*, which I have had sixteen years, are cut to about 6 feet. I am persuaded that it is a good plan to move and cut-back the roots of Manetti Roses annually or biennially. The plants like the stirring of the ground under them, and by root-pruning produce more flowers and less blind wood. The wood that from strong growth goes blind one year, if cut but little, will bloom abundantly in the next. Manetti-stocked Roses may be moved any time from September to February, or even later, with care. Take them up carefully, cut their roots to the general radius, and they will repay you for the trouble. In my fine sandy loam they strike vigorously on their own roots in one season, so that if I like I can cut the whole of the Manetti roots away. You say that ‘many articles on pruning Manetti-stocked Roses do not distinguish between standards and dwarfs.’ There are no such Roses, or there ought not to be, as standard and half-standard Manetti-stocked Roses. How could you bury the stock 2 inches over the point of union? I once was shown several Rose trees that never produced a flower, or only a very poor one. Some of them were 12 feet high. The Roses were dead, and all that was left was the Manetti. Close by was a half-standard Manetti-stocked Rose. It was a complete thickset of suckers. I could see no Rose wood at all; so I took out my pruning knife and cut away all the suckers, and in the centre were the remains of *Baronne Prevost* with a little foliage, by which I knew it, as there is no other Rose but *Triomphe d'Alencon*, which was not in existence at the time, that has the same foliage. Having cut off the suckers, I said in triumph, *The Baroness will flourish yet again*. The next year I went to see, and was not disappointed. However, standard and half-standard Manetti-stocked Roses would not flourish for any length of time unless the bark were kept scored and protected from scorching heat by some moist material.”—*W. F. RADCLIFFE.*”

ALLAMANDAS STARTING (*T. B.*).—For Allamandas to flower well at the end of May, they should at once be started. They should be fresh-potted if the roots are closely matted round the pots, but without disturbing them to any great extent, merely picking away any loose soil, and placing in a pot of the same size as before, or but little larger. If on turning the plants out of the pots you find the soil in good condition, you may merely rectify the drainage, remove the surface soil, and replace with fresh. The soil should be gradually brought into a moist state, and a moist brisk heat afforded. If pruning be necessary it ought to be done now.

GROWING FUCHSIAS FOR EXHIBITION (*Idem*).—Your newly-struck cuttings in thumb pots should be potted into 48's and kept slowly growing in a house, placing them near the glass, and where they can have air, for they must not be allowed to become drawn. When the pots are filled with roots, shift the plants into pots a size larger, and this must be done repeatedly, changing the pots as often as the roots reach the sides, and being careful never to let them want for water; at the same time they must not have too much. If the plants branch, or push side shoots near the bottom, the leader will not require stopping; but if there are no side shoots the point of the leader may be taken out when it has grown 9 inches, and one of the best of the shoots proceeding from the stopping trained in place of that removed. The side shoots for a foot upwards from the pot should not be stopped until they are 9 inches long, when their point may be taken out, and the side shoots higher up the stem may be stopped sooner and oftener, so as to secure pyramidal growth. The plants should be in their blooming pots not later than June, and the stopping may be practised to within six weeks of the exhibition; but it is well not to continue the stopping too long. All flower buds should be picked-off as they appear, or when a shoot shows flower take out its

point, but not later than six weeks before the show, for, as already stated, it is well to err in this respect, as the plants are more easily retarded than forwarded. They cannot be kept too cool and airy after May, for if drawn up by heat they grow too fast, and are long-jointed, with branches and blooms far apart. The plants should have a single upright stem, and be symmetrical in form, tapering upwards from a wide base, the shoots equally disposed on all sides, and well furnished from the rim of the pot upwards. The main constituent of the compost should be turf cut 2½ inches thick from an old pasture, where the soil is a good, yellow, not very strong loam, but strong rather than light, laid up for six months; or it may be used fresh if exposed to a strong heat to destroy the weeds and grass. Tear it in pieces with the hand, and use it rather rough. One-half of this, one-fourth old dry cow dung, and one-fourth leaf mould and charcoal in pieces, from the size of a hazel nut down to that of a pea, will grow Fuchsias well. Mix the whole well, and add sharp sand in proportion to the soil, so as to render it rather sandy. When the pots become filled with roots after the final potting, liquid manure may be applied two or three times a week. To have *Cherodendron Balfourii* in flower at the period you name, no time should be lost in starting it. Your other question shall be attended to.

AZALEAS DIFFERENTLY FLOWING (*An Old Subscriber*).—Some kinds of Azaleas have the peculiarity of producing different-coloured flowers on the same plant, but the variation is not generally permanent. We are unable to account for the peculiarity.

APPLES FOR A TRELLIS (*Turo*).—Your trellis will be very suitable for Apple trees, and we should plant double oblique trees, and, of course, train them obliquely. The trees should be planted 2 feet apart, and the length of trellis named will require eighteen trees, which should be on the Paradise stock. The following *dessert* sorts will suit:—*Dutch Magbonne*, *Margil*, *Sturmer Pippin*, *Scarlet Nonpareil*, *Adam's Pearmain*, and *Cedlin*. We would have three of each. If you wish for *kitchen* Apples, Cox's Pomona, Tower of Glammis, Manks Codlin, Keswick Codlin, Nonesuch, and New Hawthornden. You may plant with safety during this or next month, but the earlier the better. The trees may be procured of any of the principal nurseries. If you determine to have maiden plants, you may head them back and form double horizontal cordons.

POTATOES FOR CLAY SOIL (*E. F. W.*).—For first early:—*Rivers's Royal Ashleaf*; second early, *Milky White*; late, *Paterson's Victoria* or *Sherry Blue*.

GOOSEBERRY CATERPILLAR (*G. P.*).—During the present month remove the soil about the bushes to a depth of 3 or 4 inches, bury it in deep trenches at a distance from the bushes, and replace it with fresh soil or manure. Upon the appearance of the caterpillar the bushes should be dusted with belladonna powder, or they may be syringed and then dusted with lime, which should be put in the stems and scattered on the ground. Two inches thick of tan spread round the bushes and dug in or burnt in autumn, has been found a very efficient preventive.

PRUNING MOSS ROSES (*Idem*).—The Moss Roses layered or pegged down should be cut-in to two eyes, the weak shoots being cut-in to one, and any strong ones left with three.

BONE DUST FOR DESTROYING MOSS ON LAWN (*James B.*).—Bone dust from its promoting the growth of the grass is a good destroyer of moss; but we cannot say that it is the best. We recommend you to scratch the lawn well with an iron rake, and after removing as much of the moss as possible by that means, to give a good dressing of very rotten manure in March. Early in April rake it in, clear away all the loose manure, and then sow 4 lbs. *Festuca duriuscula*, 4 lbs. *Cynosurus cristatus*, 4 lbs. *Trifolium minus*, and 4 lbs. *Trifolium repens*, and if the lawn is shaded by trees, *Poa nemoralis*, 2 lbs. in mixture for an acre. Roll the surface well after sowing, but not again for a month, then mow and roll as usual. Bone dust may be applied at the rate of 8 cwt. per acre.

EVERGREENS FOR ROCKERY (*Idem*).—Nothing thrives so well as the *Asplenium japonica*. We would make it the principal shrub. Common Laurel, Yew, Holly, *Derberis aquifolium*, and *D. repens* will all succeed tolerably well, and *Rhododendron ponticum* would do in your soil. No time should be lost in planting them, as unless they be established before the Oaks are in leaf the ground will become so dry that the shrubs will perish of drought. Early autumn planting is best, but now is a good time.

VINE-GRAFTING (*A Subscriber*).—The scions should be inserted in moist soil or sand, in pots, and kept in the same house with the stock. The latter ought to be cut back at the winter pruning to the point at which it is to be grafted—that is, to a bud or eye opposite the place where the scion is to be put. When this bud has grown 6 inches pinch it back to two or three leaves, and whip-graft on the opposite side. Bind with a strip of matting, but not very tightly, and cover with clay, and then with moss over the clay, leaving the buds exposed, the moss being kept moist by frequently sprinkling with water at the same temperature as the air of the house. When the buds on the scion have expanded, one of the leaves on the stock may be removed, and when the scion is fairly in leaf the whole of the shoot on the stock may be removed. Your stock being thick we would proceed by side-grafting, which is only a modification of whip-grafting, putting the graft on the side of the cane and not beneath it, which is bad. If your stock is not now cut back do not do so, but let it push and then thin the shoots, leaving a few leaves opposite where the graft is put so to appropriate the sap, but remove or disbud entirely above the graft. When the union is complete you may cut the stock down to the graft, which should have a very encouragement to produce as much foliage as can be exposed to light.

LIQUID MANURE FOR EVAPORATION IN A FERNERY (*D. R.*).—We have tried it and we cannot say that it is injurious, but it certainly does no good, as the Ferns thrive quite as well when water only is employed. If the manure water is used strong some Ferns have their fronds discoloured by it. Charcoal is good for mixing with the soil, but small pieces of sandstone mixed with the soil keep it porous, and are quite as beneficial as charcoal, if not more so. The peat you name is not what we would recommend, but so far as we are aware it will not prove injurious.

LIQUID MANURE FOR GOOSEBERRIES (*Idem*).—Liquid manure would not injure Gooseberry bushes. It is best given when they are in growth. A thorough soaking given during any dry period that may occur after the bushes are in leaf will prove beneficial, and it may be continued up to the time that the fruit begins to ripen.

FLOWER GARDEN PLANTING (South Croydon).—Your plan is anything but a good one, there are so many points without meaning. We do not plant groups, but merely criticise. However, the following would look well:—Your central circle filled with Little David Pelargonium, with an edging of *Cineraria maritima*, or white-leaved *Centaurea*; then fill the little circle with *Aurea floribunda* *Calceolaria*, and the four pair of tailed small beds you may plant—first, next the little circle, with Purple King Verbena; second, with Christine Pelargonium; third, with dwarf *Ageratum* or bluish Verbena, like old Blue Bonnet; fourth, with Harry Hiever Pelargonium or Monitor Scarlet Pelargonium, or a low-growing Scarlet Verbena, as Lord Raglan. (A. H. W.).—We must not begin to plant beds, we must only help planters. However, the border No. 1, we would plant thus—*Cerastium*, blue Lobelia, *Aurea floribunda* *Calceolaria*, Mrs. Fielder, an improved Purple King Verbena; and back, Scarlet Pelargonium, moderately strong. The little beds we would plant with Verbenas, as more lasting than annuals.

PLANTING A CHURCHYARD (A. Z.).—It is almost impossible to give an outline of planting a churchyard in a smoky neighbourhood without definite plans or seeing the ground. In a very smoky place a row of Maples, Thorns, and Oriental Planes might be placed round the three-sided boundary, and by the sides of the walks, Mountain Ash and Poplars, the latter to have their roots cut if inclined to grow too large; or Weeping Willows might be substituted for them. If very smoky few evergreens except Aucubas and, perhaps, Box will live. If not very smoky, we would place Weeping Willows and common Yews round the boundary, and plant Cypress by the sides of some walks, and Irish Yews by others. If room can be spared in the centre, two or three groups of Arbor Vites and Red Cedars would also be in character.

REMOVING AND HEATING GREENHOUSES (South Croydon).—You had better make arrangements in writing with your landlord before you erect your greenhouses and frames on brick piers. In having no stovehole for your boiler, your hot-water pipes must not be below the level of the boiler. You may raise the pipes any reasonable height above the boiler, if it is a close one. To your question, then, of raising your pipes we reply, Yes; but your plan shows your pipes falling below the level of the boiler, and that will not do; neither does it answer well to take the pipes under such circumstances below a doorway, and raise them again to the general level on the other side. Even without sinking a stovehole the pipes might be so placed in the house as not to interfere with pathways or doorways. When several houses are to be heated from one boiler, a very simple plan is to have a flow and a return pipe at a low level all the length of the houses, and from these take pipes to heat each house separately; but in that case there must be a sunk stovehole.

HEATING BY STEAM (Subscriber).—We have little faith in heating houses, pits, and frames economically by pipes from a boiler heated by a gas ring beneath it. With such a small fire we fear that the steam would soon be condensed into water. Steam is economical when much is to be done from one good-sized furnace.

EMPLOYMENT IN A NURSERY (N. W.).—You cannot do better than write to the nurseryman as you propose.

HAY'S STOVE (T.).—We do not know where either it or the charcoal for it can now be obtained. There is a firm at Ebbwbury that could supply the charcoal, but it does not seem to care about doing so.

BOOKS (A. Ploughboy).—"The Cottage Gardeners' Dictionary," and Thompson's "Gardener's Assistant," will suit you.

REMOVING PHLOXES—SAWDUST AS A PLUNGING MATERIAL (Brown).—You may remove the Phloxes into good fresh soil with profit, and if the stools are large, divide them, but, of course, if you divide them much into small pieces, they will not bloom so well in summer as transplanting and moderate dividing would insure. When small tender plants are plunged in sawdust, the sawdust clings to the sides of the pot, and the bottom hole in the pot is so apt to be blocked up that the plant will suffer from want of drainage—how we know not, but we have had the sawdust insinuating itself until it became as hard and as firm as a cork. If sawdust is mixed—that is, old and new, from soft wood and hard wood, it is very liable to produce fungi and bad-smelling, quick-spreading Conserve. The fresher and the less mixed, therefore, the better. A heap from 24 to 30 inches in thickness by itself, will yield a mild lasting heat, but when large pots are set in it, it is advisable so to place the bottom of the pots that the sawdust do not reach the holes for drainage.

RIPENING BLACK HAMBURGH GRAPES AT CHRISTMAS (G. E.).—To have good Black Hamburg Grapes for sale or otherwise at Christmas and afterwards, we would advise a different treatment from that which you propose, since economy is your object. We would advise keeping the Vines as late as possible from starting, by ventilation and shade in bright weather, but after fairly starting we would let them have no check, but rather assist them, so as to have all fully ripe by the beginning of October. Grapes not ripe then will not ripen well afterwards, unless started very late, and that would involve the exercise of much skill. Grapes well ripened at the time specified will hang under fair treatment four or five months. The treatment they require is thinning the bunches a little more than usual, and keeping as much heat in the pipes in winter as will exclude frost, and, with ventilation, will secure a dryish atmosphere, as damp will be your chief enemy. It is in your favour that the Vines are planted inside, and the outside border should be protected with litter and means for throwing off the wet after the end of September. If you wished to have very late Grapes up to March, you will require such kinds as Lady Downe's Gros Guillaume, and Calabrian Raisin.

PAINTING A GREENHOUSE—PROPAGATING FRAMES (Mary).—Nothing answers better than white, or light stone colour for the inside of the roofs of houses, but it will be more pleasant to the eye if striped with blue. We have no objection to your having your stage pink, or any other colour that pleases you best, but most of us are content with stone colour because it shows the dirt less. Invisible green is sometimes used for the outside of houses, but white seems most lead in paint. Such little frames, 2 feet square, are most useful in propagating houses, and have been frequently recommended by Mr. Fish. He also advises that the top should be moveable, as that in the case of delicate seedlings guards against damp with little trouble, by merely reversing the glass and placing the under side uppermost. In raising seedlings, especially small ones, in a hotbed, provided the seeds are three-quarters of an inch from the rim of the pot, a square of glass laid over the pot answers remarkably well, and that may also be quickly turned. Of course, as soon as plants are growing freely, they need no glasses of any sort in a hotbed or

hothouse. Even when no such little frames are at hand, much can generally be done by keeping all tender plants by themselves, giving less air, and more dewing with the syringe and shading, than to established plants.

ERECTING A PINE PIT (Southerner).—The height of the walls of your proposed Pine pit must be regulated according to the mode of culture you decide upon—that is, whether you are to depend on fermenting material for bottom heat, or on hot water. The back wall of your pit is to be the front wall of a shed now existing, containing a boiler which heats other houses, and from that boiler the pipe passes through the ground intended for the pit, 3 feet beneath the surface. There need be no difficulty about the heating, therefore, as you can either keep your pipes in the pit at that level, or raise them to a higher level. To make the most of such a pit, all the space would be occupied, and there would be no paths in the house, and, therefore, all necessary work would have to be done by moving or holding up the sashes. Now, using hot water alone, we would have the back wall 7½ feet, and the front wall 5 feet high, which would make the back 4½ and the front 2½ feet above the ground level, provided you excavated the ground 3 feet or 3 feet 3 inches. At this depth we would have 3 inches of concrete; on that, 18 inches from back and front, we would have a 4-inch pipe going round the pit for bottom heat; between the pipes we would lay brickbats as open as possible, and cover 4 or 5 inches above the pipes, making the last covering of clean pebbly gravel. On that we would have a foot of plunging material, or 15 or 18 inches of soil in which to plant the Pines, keeping the tallest at the back and the lowest towards the front. Above the level of this plunging material we would have two pipes round the ends and front, and one along the back as a return. At back and front we would have three iron or earthenware pipes standing up above the plunging material for a couple of feet, the upper end furnished with a plug, and the lower end open among the rubble round the bottom-heat pipes, and by these we could let air and moisture into this rubble chamber at pleasure. If you mean to secure bottom heat by fermenting material, then your walls would have to be at least 2 feet more in height. Even with such a narrow pit or house as 8 feet we would be strongly tempted to have a passage either at back or front, which would permit of work being done without opening the sashes. To your specific inquiries, then, we would say, that we see no difficulty in heating, whatever the plan adopted—of course, the return must communicate with the bottom of the boiler, or with the return pipe already in work—that one pipe round the pit will not be nearly enough for a pinery, but the height of the pipes is of no consequence provided those intended for top heat have a free exposure to the atmosphere of the pit to be heated; that the size of the sashes, 3½ feet wide, will do well enough; and that the walls should be 9 inches thick. We are much obliged to you for the seeds of the Spanish Melon, and as you speak of it so highly we will endeavour to give it a fair trial. Unless the varieties are very good, we always decline trying batches of Melon seed, as to do them justice much room is required. We once grew forty kinds, all with high characters, and as we had little room we gave each a large pot in a very light house, and though we had fine healthy fruit, there was not one we would have cared to grow again.

PROPAGATING PROLIFEROUS FERNS (An Old Subscriber).—When the plants proceed from the ends of the fronds they may be left on until they are of a size fit for potting, and may then be removed and potted; or they may be established in pots whilst on the parent frond by placing them on soil in a small pot, and securing them with a peg. The plants being situated on the surface of the fronds, they may be left until they fall off, or when of good size and the old frond becomes mature, it may be laid on a pot or pan filled with soil and pegged down by the midrib, a little sand being scattered over the frond so as to partially bury it, and if kept moist the young plants will soon root, especially if covered with a bell-glass. The young plants proceeding from the stipes near the crown of the plant should be left on the old plant until they are of a size fit for potting, when they may be removed and potted-off. In most instances the young plants will have emitted roots by the time the old frond is mature, and that will be the proper time to remove them. They should be potted into sandy compost, and not in sand only. Two-thirds fibrous peat or old cocoa-nut refuse, and one-third sand, will be better than all sand.

PROPAGATING VIOLA CORNUTA AND VIOLA LUTEA (Lincoln).—The old plants of *Viola cornuta* may be taken up this month, divided, and planted as you propose. If the weather at and after planting prove dry the plants should be watered, and a slight shade be given from bright sun until established. Seeds of *Viola lutea* sown now in pans and placed in a gentle heat afford fine plants for autumn bloom; but they do not bloom so freely as older plants. The seedlings should be kept near the glass, be pricked-off when large enough, grown on in heat, and well hardened-off previous to planting out. They will bloom in August, earlier or later, according to their forwardness.

TURF SOIL (A Subscriber).—Your soil or turf will answer for potting Camellias. The limy matters, we presume, form only a small proportion of the whole, and in that case will not prove injurious. Your soil from the turf will be too light for the culture of Pear, Apple, and Peach trees; but it will answer for a compost for Apricot and Plum trees if enriched with one-fourth cow or sheep droppings. It will do for a Vine border, but we should have liked it better had the sand been sharper or more gritty.

FORWARDING SEEDLING ZONAL PELARGONIUMS (Devon).—Your seedlings should be kept near the glass, and have a fair amount of air, avoiding cold draughts, otherwise they will become drawn. When large enough to handle they should be potted-off singly in small pots, be placed in a gentle heat, and be kept rather close, moist, and shaded from bright sun until they recover from the potting, when they should have a position near the glass, and an abundance of air on all favourable opportunities. The plants, having made two or three leaves in addition, should have the growing point removed with the point of a knife, and should be shifted into pots a size larger whenever the pots become filled with roots, and this may be continued until the plants are in 6-inch pots, which will be quite large enough for you to test their blooming qualities the first year. When the plants are in free growth they should have a light and airy situation in a cool house, where they will do much better and flower more in character than in a heated structure, which is not suitable for them after they become established in pots.

SOWING BUCKWHEAT (Belfast).—Buckwheat should be sown early in April; but if the weather is favourable it may be sown in March, the

ground being in good working order. Three bushels are the usual allowance per acre; but the ground being occupied with trees, half the quantity will be sufficient seed per acre.

TEMPERATURE FOR PELARGONIUM CUTTINGS (*Idem*).—The temperature may be from 60° to 65° at night, and from 70° to 75° by day, the atmosphere being kept close, moist, and shaded from sun. The cuttings will succeed in a lower temperature, but their rooting is not so speedy.

PROTECTING PYRAMID FRUIT TREES (*Catalpa*).—The best plan that we know is to put in some stakes around the trees, and so far distant from them and so high as to keep the material put over them from rubbing against the blossoms. The stakes may be driven into the ground, and securely tied together at the top. Over these may be put a covering of tiffany, so as to protect the trees. It should fit closely at top and all round; but it will not matter if the material do not reach lower down than a foot from the ground. The covering should be secured to the stakes at bottom with string to prevent its being blown off or brushing against the blossoms when strong winds occur. The covering should only be used on frosty nights, or during the day when there is frost; at

other times the trees should be exposed. It will not matter about the trees being covered, so long as the bloom is not expanded, then the covering may remain on by day, which will tend to retard the blooming, and lessen the danger of injury from frost.

TEA-SCENTED ROSES (*W. Booth*).—The best are Adam, Devonien-sis, Madame Villermoz, Souvenir d'un Ami, Souvenir d'Elise, Bouton d'Or, Madame Margottin, Elise Sauvage, Vicomtesse de Cazes, and Rubens.

LATE VINES FOR GREENHOUSE (*Idem*).—Black Prince, Black Hamburgh, and Black Muscat of Alexandria.

PANSIES (*Homunculus*).—Of the growers you name, Mr. Bragg lives at Slough, Bucks, and Mr. Dean, at Shipley, York-shire. We do not know the "Red Russian Potato."

NAMES OF PLANTS (*T. E.*).—1, *Lomaria spicant*; 2, *A Myrtle* of some kind, no flowers; 3, *Chimonanthus fragrans*; 4, *Aspidium falcatum*; 5, We will give the name next week; 6, *Selaginella cesia*. (*Tertia*).—1, *Adiantum cuneatum*; 2, *Adiantum athiopium*; 3, *Nephrolepis cordifolia*; 4, *Pteris longifolia*; 5, *Selaginella Brannii*; 6, Too young. (*C. G.*).—1, *Deutzia gracilis* *floro-pleno*; 2, *Myrsiphyllum asparagoides*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending March 3rd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. 26	30.244	30.134	56	45	47	43	S.W.	.00	Overcast; overcast and cloudy; fine, very dark.
Thurs. 27	30.045	29.918	50	40	47	43	S.W.	.00	Overcast; densely overcast; cloudy and fine.
Fri. .. 28	29.886	29.790	57	44	48	44	S.	.00	Clear and fine; very fine; clear and very fine.
Sat. ... 29	29.601	29.227	51	34	48	44	S.W.	.48	Overcast, brisk wind; overcast, very boisterous; cloudy, rain.
Sun... 1	29.759	29.382	50	40	47	44	N.W.	.07	Clear and fine; slightly overcast; boisterous, rain.
Mon... 2	29.978	29.897	55	42	47	44	N.W.	.00	Hazy; cloudy and overcast; clear and fine.
Tues. . 3	30.157	30.125	59	46	48	44	N.W.	.02	Overcast, slight rain; overcast; cloudy at night.
Mean	29.953	29.782	54.00	41.71	47.43	43.71	..	0.57	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE HEWITT TESTIMONIAL.

THE subscription list for the above object has now been open for five months. I am anxious to give every one an opportunity of sending his subscription, and therefore wish to give notice to any of my brother fanciers or committees of shows who have not yet sent in their names, that the list will be positively closed at the end of the present month (March), and I hope before that time they will make up their minds, and let us have the list completed by the addition of their names.

I cannot allow this opportunity to pass without tendering to those ladies and gentlemen who have so promptly and liberally responded to the proposal I made six months ago, my sincere and hearty thanks for their kindness and generosity; and I am sure they will join with me in hoping that Mr. Hewitt may long be spared to officiate as a judge at our poultry shows.—J. R. JESSOP, *Beverley Road, Hull*.

CLASSES OF BRAHMA POOTRAS.

UNCLE SAM and Cora, whose portraits figured in the "Poultry-yard," had much more grey in their plumage than there is in many Light Brahmas at our shows, and they, to my mind, were quite beautiful, the *beau idéal* of Brahmas. Some Brahma-fanciers will disagree with me when I state my conviction, as regards breeding Brahmas, that we make a great mistake in dividing them into Dark and Light, and that the right shade should be a clear grey speckle on a white ground, removed alike from heavy dark and white. This was the shade which the United States fanciers advocated when they first sent these excellent fowls to England, and the advice sent over with the importations commencing in 1853 or so (which disseminated over England the hardest, and perhaps the best fowl we have), was to guard against a tendency to too dark or too light a shade, and to preserve the sharp grey marking on a clear white ground by mating light with dark and dark with light. The division of Light and Dark has been easily obtained by mating dark with dark, and light with light. It is a mistake to think that all Dark Brahmas have been obtained by means of a cross with Dorkings, although some Brahma families I know are so derived. Light Brahmas, also, sometimes show unmistakable signs of crossing with white Cochins; but I know for a certainty that pure Brahmas may be bred of all shades from quite dark to quite light.

I have bred my Brahmas divided into Dark and Light, because I like to make the sale of my surplus chickens pay the

cost of my amusement, and purchasers most frequently ask for Dark or Light, otherwise I should have aimed exclusively at a sharp grey marking on a clear white ground, producing a bright grey fowl. For many years I have divided the Dark and Light, and kept them distinct.

My Dark are of so dark a grey as to be almost black in the marking; the marking is in different specimens fine and mossy, or of a bolder character; the ground colour, little seen, is clear white; and the bottom colour deep grey.

The Light are white on the surface only, with well-defined black in the hackle, tail, wing-feathers, and a clear, full grey as the bottom colour. The grey is so full that a feather cannot be ruffled, or a breath of wind blow over the fowl without showing it. Like Mr. Pares, I think white under fluff a great fault.

I have said that I consider it a mistake to divide Brahmas into Light and Dark; if there must be division of colours, there should be three classes instead of two. The grand characteristics of the Brahma are, however, of much greater importance than colour—their hardiness and strength of constitution, their tame domestic habits, their care of their own health, scarcely surpassed in sense by the dog, and their excellence as layers and as table fowls. The full wide shape, compact make, shortness of leg, peculiar expression of eye, prominent brow, and the unique form of the pea-comb, unite to make them distinct from all other fowls.—E. WATTS.

I AM a breeder of both Light and Dark Brahmas, and quite agree with Mr. Pares' and Mr. Worthington's remarks that separate prizes should be given to Light and Dark Brahmas, as I am sure the Light stand no chance when shown in the same class as the Dark. At the late Cambridge Show I thought it useless sending Light Brahmas, although I have the fowl that won the cup at Birmingham, and the highly commended hens, so I sent a much inferior pen of Dark.

I would suggest that committees of shows, if they cannot give a cup to the Light as well as the Dark, should not give one to either, but give money, equally divided between the two.

As the Light Brahmas are greatly on the increase, I think it quite time they should be placed equally with the Dark at shows.—HERBERT DOWSETT, *Park Farm, Pleshey, near Chelmsford*.

I AM very pleased to see others have taken up the Light and Dark Brahma question; but I must say I think "Y. B. A. Z.," although he has "no unkind feeling towards his old love," is rather hard on her, and runs the Light Brahmas down too much. He says the Dark beat them in every point. Now, are not Light Brahmas quite equal to Dark in all points but size, and many in that?

Last season I bred several Light Brahma pullets, which at

six months old weighed 6 to 7 lbs., and cockerels at the same age 9 lbs. I have now a Light Brahma cock hatched in 1866, the one that took the second prize at Southampton in November last, which weighs 12 lbs., and a hen of 1866 of 9 lbs. weight. Nearly all my birds are well leg-feathered (a number of the Dark which are exhibited are vulture-hocked). Also, in respect to the comb, which is one of the most marked characters of the Brahmas, are not the Light often superior to the Dark? I am aware many of the Light have the centre comb too much twisted; but how often do the Dark have very thick clumsy combs; in fact, almost a strawberry comb.

As "Y. B. A. Z." says, the colour of the Light Brahmas is now perfect in many birds, and no doubt, as Mr. Crook states, they will now soon surpass the Dark in size, if they only have fair treatment, and exhibitors see that it is so.

"Y. B. A. Z." says many shows could not afford two cups in the Brahma class, and that many committees find it hard to make both ends meet, even with such a liberal prize list as that of the Bristol and Clifton Show. Would it not have been much to the advantage of that Show to have had more cups of less value instead of one of £12 12s. and eight of £7 7s.? The same amount of money would have almost procured fourteen £5 5s. cups, which, surely, are quite valuable enough for prizes, as the honour and not the value is what is desired by exhibitors.

Let me ask, in conclusion, whether people are ashamed of their names, that so many avoid letting them appear. It is a great misfortune we should not know the names of the writers of articles in "our Journal," so that we might form some idea of the value of the hints and suggestions thrown out. Doubtless most of our readers do know who the great guns, such as "Y. B. A. Z.," "WILTSHIRE RECTOR," "NEMO," "NEW-MARKET," &c., are; but there are many of our smaller guns whose remarks would be far more interesting and valuable if the name and address were appended, instead of some hieroglyphics for which no one is the wiser.—PHILIP CROWLEY, *Culverton House, Alton.*

RAILWAY CHARGES.

In the Journal of February 27th appeared an article by "BRAHMA" upon the excessive railway charges for carriage of fowls for exhibition. As one of the Honorary Secretaries of the Somerset County Poultry Association, I distinctly deny the truthfulness of that portion of the article which has reference to a charge of 5s. 3d. being made from our Show to the railway station.

Various exhibitors having requested that their railway charges for through-carriage should be paid by the Association, and recharged to them, such course was adopted by our Committee; and I find from the accurate mode in which the arrangement with the Association in respect to through-carriage for hampers, &c., has been kept by the Bristol and Exeter Railway Company, that one charge only of the exact sum of 5s. 3d. for through-carriage has been paid, opposite which sum is the number of the label and name of the exhibitor.—ONE OF THE HON. SECRETARIES.

MANAGEMENT OF BRAHMA POOTRAS.

FROM nearly all who had eggs for hatching from me last season I had glowing accounts of the pullets. In a note from an old friend at Richmond (Mr. Kinghorn), he says, "Your giants are great favourites, and lay every day. Another says, "Dr. Curtis has seen the pullets from your Dark Brahmas, and he says they are worth £1 per head."

Our mode of feeding does not differ from that pursued by other people, with the exception of breaking up all bones. I have a raised block for the purpose, and with a common hatchet break, or rather smash, up every morsel of bone, whether it be of fish, flesh, or fowl. It would please any one to see how soon the fowls put in an appearance when the chopper goes to work. I have a beautiful grass run for them, but very indifferent shelter for them in cold or wet weather. The old fowl, of which I sent you a notice as having laid 279 eggs, made the number up to 289! Now I am happy to say she is having a thorough shift, and still looks as rosy about the head as any of the pullets.—J. P.

BIRMINGHAM POULTRY SHOW.—We are informed that the Council of the Birmingham Cattle and Poultry Show will meet shortly to revise the prize lists for the present year. Intending donors of special prizes, or exhibitors having suggestions to

make as to changes desirable, will do well to communicate at once with the Secretary.

FOUR-TOED HOUDANS.

I AM glad to see that several of the leading breeders of Houdans have taken up the cause of the fifth toe, which appears to be so strong an abomination in the eyes of Mr. Schröder and others. It is one of the leading characteristics of the breed, and, in my opinion, is as important as crest, beard, or plumage. Besides, so strongly has this "abominable" point been insisted upon, that myself and other breeders have abstained from using birds which do not possess it; and our efforts have been so far successful, that out of nearly one hundred birds bred by me last year, I had but three with only four toes, and these I consigned to the cook.

If Mr. Schröder's suggestions were adopted, the care we have taken in improving our stock will have been entirely thrown away, and we shall have to start afresh. This, I maintain, would be excessively unfair.

I have never had a Houdan with a bumble foot, so the fifth toe is not attended with those evil consequences which attach to the Dorkings.

"NEMO" says the plumage of Houdans has not yet become uniform. Let us make it so. For my own part I have a strong objection to Light birds, which become less distinctly marked with age, and have this year determined to breed solely from Dark birds, which are decidedly the most fashionable.—LINDUM.

A CAUTION TO FOWL-SELLERS.

THERE have been so many "cautions" in your valuable paper, and to which my attention has often been drawn, that I am surprised any one should be victimised after reading them. In spite of myself, however, I have to confess that I have been "done," and that, too, by a celebrated breeder and exhibitor of Buff Cochins.

The story of my wrongs, how my best birds were got before being paid for, and sent to an early exhibition, where they took cup and prize; how the gentleman wrote me stating that he had only taken second prize; next, how a week or two afterwards he stated that he could not pay me, as the secretary of said show had not paid him; and how after many months, and many instalments, I was completely "dropt," being minus several shillings, which the said gent deducted for part railway expenses when he came, several months before, to see my celebrated Buffs—a full account of this most interesting transaction I purpose sending to your Journal next week, if you will promise me a little space; and I wish distinctly and emphatically to state, that I shall do this solely to benefit those who may have to part with their "pets" from unforeseen circumstances, and as a "stopper" to those would-be respectable exhibitors.

If you can afford space next week for a letter from me, on this subject, I would esteem it a favour.—F. W., 14, *Westbar Green, Sheffield.*

[We hope this will suffice without further exposure. If the party you allude to does not fully satisfy you, let us know.—EDS.]

PIGEONS—NUMBER OF CROSSES.

I AM asked by Mr. Rose what number of crosses between two birds I consider are required in order to produce "fine healthy Pouters." If I understand the question rightly, the desired healthy Pouters may be produced from one pair of birds either having no relation to each other, or being distantly related. I am no advocate for a continued crossing, and think we often err in this, as we cannot be always sure of the origin of newly-acquired birds. If we obtain a good "strain" we should be careful of the cross we introduce, both as regards colour and style. Any strain may be kept up by matching relations now and then, and it is remarkable how far we may go in this way, without injuring the form or constitution of the birds.

About twelve years ago, during my absence from home, a pair of Pouters, mother and son, mated and produced a pair of eggs. The young birds were reared by a pair of Fantails, and finer healthy birds I never saw. I shall say nothing of their colour, but for size and perfection of shape I have not seen them surpassed. The descendants of this produce figure to this day in the high places of our best exhibitions. Such a

match as this no one would recommend, but two or three pairs of fine birds of one colour, or colours kindred to each other, will serve for many years without introducing any new blood.—JAMES HUIE.

ROUP IN PIGEONS.

The following recipe for roup in Pigeons may perhaps be of use to Mr. Boyd and other breeders. I have cured some most inveterate cases with it, and, proper time being allowed, do not think I ever remember it to have failed.

Upon a small handful each of rue, wormwood, and horehound, pour a quart of boiling water, strain off when cold into a common wine bottle, adding a small quantity of saffron and a little sugar, a table-spoonful to be given to the bird through a funnel every morning.

The mixture will keep good any reasonable time when bottled. I have also found it of great use, with other remedies, for cancer.—W. K. ROSE.

A GUIDE TO CANARY BREEDING.—No. 1.

AMONG our household pets, the Canary very deservedly holds a high place in our estimation. He is a cheerful, merry little fellow, and is at home alike in the cottage and the mansion, repaying such trifling attentions as he demands at our hands with the most delicious melody, which under proper training can be made to rival the notes of the sweetest song birds of Britain.

But not in this respect alone does interest attach to the Canary. An almost endless diversity of shape and plumage has rendered it a most attractive subject for the fancier; and the magnificent collections which are annually congregated at our great exhibitions at the Crystal Palace, Sunderland, Southampton, and other towns sufficiently attest the increasing interest with which this bird is regarded, while the large prices realised by good specimens indicate financial results of a flattering character. The impetus which the exhibitions have given to Canary-breeding is something extraordinary; and since it is an occupation, the tendencies of which are all elevating, and which can be carried on in the nursery, the parlour, the study, the conservatory, or indeed almost anywhere and everywhere, it shall be my object to give a few practical hints for the guidance of those beginners who may be disposed to "put up" a pair or two of birds for the approaching season. I do not propose to issue a learned treatise, but simply what it pretends to be, an A B C guide to those who are studying the alphabet of Canary-breeding.

All Canaries are, as a rule, divided into two classes as regards colour—viz, Yellow and Buff, or more technically speaking, Jonque and Mealy. Whether Norwich, Belgian, Cinnamon, Lizard, Green, or any other class, these two are the primary colours, any markings or variegations being built upon these two foundations.

It may appear strange to a novice when he hears that a Green may be a Yellow Green or a Buff Green, but a very little explanation will make this clear. Perhaps it will be better first to give a definition of what is meant by Buff, which has some very strongly marked features, while Yellow is conspicuous by their absence.

Buff or Mealy, then, in a Canary, is that dead, flat colour which is always found overlaid, more or less, by a white, silvery, mealy exterior, giving the bird the appearance of having been dusted with flour, sometimes almost to whiteness, hence the term mealy—and which flatness of hue with its overcoat of meal is clearly observable over any colour whatever. Yellow consists in the absence of this dead colour and meal, and the substitution of a clear transparent hue.

Jonque and Mealy are, in their application, more expressive terms than Yellow and Buff, and may, without too closely considering their etymology, be understood to convey the idea of a clear, glossy, brilliant, transparent shade of any colour, or a dead, flat shade of the same, overlaid by a coat of meal, which, since it turns Yellow to Buff, has occasioned the general use of these familiar words. We can therefore have, for example, "Jonque Cinnamon"—i.e., a pure, clear, brilliant, transparent cinnamon, and we can also have a "Mealy Cinnamon"—i.e., the same colour, but overlaid with more or less meal, giving it a subdued shade, which is to the other as Buff is to Yellow. The same observation applies to Lizards, and as stated at the outset, to all classes. It may not be so obvious in one as in another, but the distinction is there, and a very little experience will enable the beginner to detect it.

A right appreciation of the purity or depth of shade in colour

is arrived at only by experience, but this general explanation is given to enable the breeder to pair his birds properly, the first fundamental maxim being, Pair Jonque cocks with Mealy hens, and *vice versa*.

The Mealy birds of either sex are invariably the most compact in plumage, and the crossing of the colours induces this most invaluable property while it intensifies the colour *under the meal*, producing in some instances birds of a marvellous hue. The produce of two Jonques, even if high in colour, will be apt to be wanting in quality and what is called "open-feathered," while that of two Mealy birds will be deficient in colour. There are cases in which it may be highly judicious to pair two Jonques or two Mealy birds, and such is often done with a view to bring about certain desired results, but the beginner need not try any experiments. It is usual also in pairing crested birds to cross a crest with a baldpate. Two crests are seldom paired together unless for special purposes, though this also is sometimes done when special results are aimed at.

The birds should not be "put up" too soon. The state of the weather to a greater or less extent alters the time. They will breed under favourable circumstances at Christmas, but this is by no means desirable. Some breeders have favourite dates at which to commence; one of our most eminent breeders told me at the late Crystal Palace Show, that he is never later than the first week in March. Much, however, must depend upon the situation, aspect, &c. As a rule, the beginning of April is early enough to make a start, at least in the north. Remember that two fine days do not make a summer, and many a breeder has had cause to regret being tempted to pair his birds too early. Better begin late, very late, than too early—rely upon it nothing is gained by being impatient, and nothing is lost by waiting, till—when? Why till the nights are warm and your hens can see to feed at five o'clock in the morning.—W. A. BLAKSTON.

ADDING LIGURIAN QUEENS.

IN substituting one queen for another, inexperienced apiarists would do well to attend to all those precautions which have been recommended to be observed by Mr. Woodbury. A queen cage is a most useful auxiliary in the process, and the American plan of immersing the queen in liquid honey immediately before introducing her to her new subjects, is often crowned with success; but I have never in my own apiary used any of these adjuncts, my practice being based on the conviction, arising from experience, that bees will cheerfully accept any sovereign after they have fairly ascertained the loss of their own, provided that no encasements have recently taken place within their hive, and no stranger element has entered it.

During the breeding season the loss of a queen is generally discovered within twenty-four hours, and when the bees become conscious of their loss they are thrown into a state of agitation, and may be seen running out and in at the entrance, and up and down the front of the hive. If about two hours after this agitation is observed a new queen be given to them, they will receive her favourably, even though the hive should be filled with eggs and brood.

After breeding is suspended, and the bees have entered into a state of comparative repose, they might not, in the absence of a thorough disturbance, find out their loss for several days. When, therefore, I abstract a queen for the purpose of replacing her by another, I take care to rouse the hive into complete activity. If the queen is taken away in the morning I put the deprived bees into a state of general commotion in the after part of the day, either by tapping, partial driving, or elevating the frames and shaking the bees back into the box, according to the character of the hive operated on. This makes the bees search for their queen, and by the following day the unwelcome truth has been sufficiently learned that she is no longer among them. The signs which indicate this are as follow:—On removing the crown board, or turning up the hive if a common straw one, and blowing a little smoke on the bees, a continuous hum is set up by a general vibration of the wings, and a running-over the combs as if in search of something. The new queen may be introduced as soon as convenient after this evidence has been obtained, and I always inaugurate the introduction by a few whiffs from a fumigator held in the mouth.

In following the practice described, I do not remember ever having lost a queen, or requiring a longer interval than twenty-four hours between removing the old sovereign and substituting the new.

Hives in which queens have been imprisoned should be

allowed to remain in a queenless state for a few days before giving them a new sovereign; and I need scarcely add, that all operations should be conducted at a time when bees in neighbouring colonies are least likely to be attracted to the scene. Excepting during the swarming season, a more favourable reception is given by bees to fertile than to virgin queens.—R. S.

WHO FIRST SUCCEEDED IN INTRODUCING THE LIGURIAN BEE?

MAJOR MUNN, the inventor and patentee of "Munn's patent bar-and-frame hive, or miniature apiary" has recently read a paper before the East Kent Natural History Society, in which he makes such remarkable statements regarding the first introduction of the Ligurian bee into England, and other matters in which I am personally concerned, that I have been induced to correct them in a letter addressed to a local paper, in which appeared a report of his observations, and which letter I shall be glad to have republished in "our Journal." The true facts of the case were very well known to the apian world at the time, but it is not impossible that after the lapse of between eight and nine years, many may be imposed upon by the attempt now being made to claim on behalf of Mr. Neighbour credit for what was really achieved by—A DEVONSHIRE BEE-KEEPER.

"To the Editor of the *Dorset Chronicle*."

"SIR,—I am indebted to the kindness of a friend for the opportunity of perusing a copy of your Journal of the 22nd inst., which contains a report of a paper on "Bees," read by Major Munn before the East Kent Natural History Society, and in which I find it vouched for that "Mr. G. Neighbour, of Regent Street, was the original introducer of the Ligurian or Alp Bee, through a German named Hermann. Now, as I have always considered, and never before knew it disputed, that I was the first who succeeded in introducing this bee into England, I will briefly state the circumstances of the case:—

"During the summer of 1859, I entered into correspondence with M. Hermann, and received a queen direct from him at the same time that he sent some queens to Mr. Neighbour, one of which I believe found its way to the Rev. Mr. Scott, of Shepherdswell, in your neighbourhood, and I afterwards had other queens direct from him during the autumn of the same year. It so happened that all my queens lived through the following winter, whilst the others (Mr. Neighbour's and the Rev. Mr. Scott's) died, and the supply being cut off by the disappearance of M. Hermann, Mr. Neighbour possessed no Ligurians whatever, except what came from my apiary, until four or five years afterwards, when he succeeded in again obtaining bees from Switzerland. During the International Exhibition of 1862, Mr. Neighbour showed a stock of Ligurians, which I lent him for the occasion, and which he returned to my apiary when the Exhibition closed. From this stock, which he thus exhibited, he took orders from the Victoria Acclimatisation Society, for several stocks to be sent to Australia. These orders were in due course transmitted to and executed by me; the devices by which the bees were enabled to survive an uninterrupted confinement of seventy-nine days being contrived and executed by myself alone. To me, therefore, and to me alone, belongs also whatever credit may be due for the successful transmission of the Ligurian bee to the Antipodes, where it has since multiplied and flourished so abundantly.

"Major Munn also states that I now supply 'Ligurian bees and bee hives at £5 and £6 each stock,'—my price really being but £4 1s., including first-class frame hive, and taking upon myself the risk of transit to all parts of the United Kingdom of Great Britain and Ireland.

"I may perhaps be permitted to say a few words on the subject of hives. I have never sought to derive one penny advantage from the sale of those called after my name, but have always freely supplied patterns to be copied, without fee or reward, by any hive-maker who might ask for them. As regards price, a first-rate frame hive can be made and sold by the retailer at a fair profit for a guinea, and if dealers will not supply them at that rate I will do so myself, to any who may apply to me.—Yours, &c.—T. W. WOODBURY, Mount Radford Rectory, 26th Feb., 1868."

DISASTROUS EFFECTS OF FOUL BROOD.

I REGRET to find it stated in Major Munn's paper on "Bees," read before the East Kent Natural History Society, and to which I have already referred, that "Mr. Neighbour has to deplore the great loss of some sixty stocks of bees;" so that it would appear that foul brood has been just as disastrous in its ultimate effects on Messrs. Neighbours' own apiary as on those of their customers who have received bees from them since they undertook themselves to import and supply Ligurian stocks.—A DEVONSHIRE BEE-KEEPER.

EARLY QUEEN WASP.—A fine queen wasp was found on the lawn, near Hull, to-day (February 24th), and destroyed. Is not this very early? [Yes.]

OUR LETTER BOX.

DOUBLE-YOLKED EGGS (C. M.).—If two yolks are equally developed in the ovary, and pass at the same time into the egg passage, they become surrounded by the same white and shell. We never know a double-yolked egg produce a live chick.

COCK'S SOJOURN WITH HENS (Susan).—A fortnight if possible, but a few days are always considered sufficient. We consider three days enough.

STARLING PIGEONS—PINIONED DUCKS (Widgeon).—The Starling Pigeon should not have mottled shoulders. A pair of wild Ducks would not be disqualified because they were pinioned.

JUNGLE FOWL (*Idem*).—We have kept the "Gallus Bankiva" through many winters. We kept the birds at liberty, and in all weathers they roosted on the top of an unusually high holly tree. We do not believe they would do well with Golden and Silver Pheasants. We could never tame them. We endeavoured to keep the last we had in a large aviary, but he flew up against the top covering till he killed himself.

KEEPING EGGS (G. H.).—Take a deep bread-pan; at the bottom put wetted lime 3 inches deep. It should be so slaked that the egg put in it will retain the position in which it is placed. Stand the eggs in it closely together, small ends downwards. When the layer is full pour on sufficient slaked lime to cover every egg, add to it till there is enough to make every egg stand upright; when it is completed pour over again, and begin the third layer. Continue in like manner till the pan is full. They will keep as long as you please to keep them. If they are new-laid when put in they will keep so, but if they are stale they will not be restored by it.

MOPING PULLET (Lemon Buff).—Your Cochins pullet has not had the roup. They are not subject to it. She is in a bad state of body, and this inclines her to raw meat. Grass is good food. We recommend purging with castor oil till no more slime comes away, and feeding on stale bread and ale to keep up strength. We also advise a pill of campher the size of a pea every night.

DORKING HEN WITH INFLATED AUBOMEN (W. B.).—It is possible there is an obstruction of the egg passage. If it is caused by a broken egg, it is incurable; if by a whole egg, you will relieve it by taking a wing feather, soaking it thoroughly in oil, and passing it gently up the passage till it meets the obstruction. This should be done several times, and the feather should be dipped in the oil each time. This must be delicately done, as the egg breaks easily while in the hen, and there is no remedy in such a case. If it be so, the egg can be easily felt. If it is not, we know no remedy but active purging with castor oil to remove the cause of distress.

SWOLLEN CROP (F. S.).—The swollen crop in the Silver-Grey Dorking pullets probably arises from sluggish action in that organ. Give each a dessert-spoonful of brandy two or more mornings following.

BEARING DOWN IN A BRAHMA PULLET (Subscriber).—Citrate of iron will only do harm in her case. Your hen has a difficulty in laying. A feather soaked in oil and passed up the passage will enable her to lay without pain or effort. This will only be necessary two or three times. Let her have plenty of grass, and if you have lettuces give her some. It is not an uncommon case at this time of year.

GAME FOWLS, WITH GAME BANTAMS (W. H. B.).—It is not safe to let them run together.

GROUND OATS may be obtained from J. & B. Marsh, Corn Merchants and Steam Millers, Kingston, Surrey.

HEAT IN INCUBATOR (A. W. Shaw).—The temperature under the flannel is that which you must attend to.

BULLFINCHES (—).—Bullfinches are late birds at nesting. Give them the usual food—viz., rape, canary, and a small quantity of hemp seed not bruised. Place in the cage the material for building, let them have all the sun you can, and about the end of May probably they may breed.

MR. WOODBURY'S PHOTOGRAPH (C. A. J.).—You can have a photograph of Mr. Woodbury if you enclose thirteen postage stamps with your address.

BEE HOUSE—REMOVING BEES (H. A. F.).—We prefer a verandah or a lean-to shed, built against a wall, of sufficient width and height to shelter the hives, and permit all operations to be conducted at the back. Your question as to where to get a stock of Ligurians was answered by Mr. Woodbury in page 176. The best time for transporting a stock to Scotland is as soon as the dangers of winter are entirely over, and the bees are restored to full strength and activity—say April, or even May, according to the season.

BROWN SUBSTANCE ON THE ENTRANCE AND TOP OF A HIVE (E. Y. C.).—The thick brown composition which you describe is the excrement of the bee, and its appearance about the entrance of the hive may be regarded as the premonitory symptom of incipient dysentery, which, however, will probably disappear under the genial influence of a little mild and open weather.

BEE HIVES (J. D., Sheffield).—All depends upon the extent of your apian requirements. The scientific bee-keeper will find the Woodbury frame hive the best and the most profitable, whilst the novice and those possessed of but little scientific knowledge will do well to commence with flat-topped straw hives, such as the one delineated in page 178; or Payne's Improved Cottage Hive, described in "Bee-Keeping for the Many." Either of these can be manufactured by any ordinary straw-hive maker at a moderate price.

DRIVING BEES (A Bee-keeper).—If the bees of a strong stock are driven into an empty hive they will, if placed on their old stance, usually remain there and set vigorously to work after the manner of a natural swarm; and if a swarm of Ligurians are inducted into their well-stored dwelling they will thereby obtain a very great advantage and, doubtless, flourish amazingly, whilst no permanent stain will result to their purity. The few bees ordinarily sent with an Italian queen are, however, not sufficient to establish a stock in this way, or in any other than the ordinary manner—i.e., by putting the queen at the head of a stock of common bees.

RETRIEVER PUPPY DISEASE (S. H. Ridge).—The symptoms are those of "the distemper," in a very advanced stage. Give a grain of calomel and a grain of tartar emetic mixed. This will act as an emetic and purgative, but you had better read what Youatt directs in his work on "The Dog." It fills several pages.

WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 12—18, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
12	Th	Meet. of Royal and Zoological Societies.	50.6	32.0	41.3	19	22	at 6	59	at 5	38	at 10	15	at 8	18	9 59	72
13	F	Meeting of Royal Institution.	50.7	33.8	42.2	14	20	6	0	6	46	11	44	8	19	9 33	73
14	S	Royal Horticultural Society, First Spring	51.1	34.7	42.9	19	17	6	2	6	morn.	18	9		20	9 16	74
15	SUN	3 SUNDAY IN LENT. [Show.]	50.8	34.9	42.3	20	15	6	4	6	47	0	55	9	21	8 59	75
16	M	Meeting of Entomological Society.	51.4	34.3	42.9	14	13	6	6	6	45	1	57	10	22	8 42	76
17	Tu	R. Hort. Soc., Fruit, Floral, & Gen. Meet.	49.9	32.6	41.2	13	10	6	7	6	36	2	25	11	23	8 24	77
18	W	Meeting of Royal Agricultural and Meteorological Soc., and Society of Arts.	50.3	33.3	41.8	12	8	6	9	6	20	3	after.		24	8 6	78

From observations taken near London during the last forty-one years, the average day temperature of the week is 50.7°; and its night temperature 33.5°. The greatest heat was 67°, on the 12th, 1841, and 15th, 1828; and the lowest cold 17°, on the 17th, 1846. The greatest fall of rain was 0.70 inch.

PROPAGATION OF CENTAUREA CANDIDISSIMA.



N answer to your correspondent "J. A." (page 164), I am able to state that we have had good success here in the propagation of the above-named plant during September last. I consider September a desirable month for performing the operation. At that time the plants are well ripened, and the cuttings firm, without which there is but little chance of success.

Our mode of treatment is to make a common hotbed of dung and leaves, with 9 inches of sawdust on the top.

We are much in favour of the sawdust as a plunging material for many purposes. It is a very slow conductor of heat, and prevents root-burning, if the bed become too hot.

We select the firmest side shoots, cut them with a small portion of old wood, or heel, pot singly in 2½-inch pots, but if smaller pots are used so much the better. Potting the plants singly is of the greatest importance, as *Centaureas* will scarcely endure being divided: in fact, their roots are more tender than those of any other plant I have ever handled.

We prefer a bottom heat of from 90° to 100°; the frame is never shut up closely, excepting during strong winds and bright sunshine. We then close up and shade.

Careful ventilating and watering are as essential for success in striking these as for all other kinds of cuttings. If well watered when put in they need but little more watering until they are rooted, especially if grown in dung-heated frames.

We have just repotted three hundred strong plants of *Centaurea candidissima* which were struck in September last, and they are a fine stock of plants that many nursery-men would be proud of.—W. CLARK, *Ruby Gardens*.

In reply to "J. A." I always operate upon my plants in September, and I will state the method which I have successfully practised for the last two seasons.

In the first place, I do not use bottom heat, but strike the cuttings in a cold frame, which I place on the bare ground with the back turned towards the midday sun. I then cover the space inside the frame with coal ashes to the depth of 4 or 5 inches, and in this material I plunge my cutting pots up to the rim.

Having completed this part of the work, I next take off the cuttings, which I prepare in the following manner:—Unlike "J. A." I am not particular in having a piece of "heel" attached to the base of the cutting, for I invariably find that roots are emitted much sooner and better without it. I cut the shoot clean across with a sharp knife, and remove two or three of the lowest leaves with the knife. Each cutting is inserted singly in a small 60-sized pot, made tight and firm, and tied neatly to a small stick. To the latter precaution I partly attribute my success, for it prevents the cutting from flagging so much as it would otherwise do.

No. 363.—VOL. XIV., NEW SERIES.

The cuttings are then thoroughly watered, plunged in the frame, and kept close until they have rooted, and are fit for potting, which will be in about three weeks.

After potting, the young plants are again placed in the frame, and kept close and dry until their roots have penetrated the new soil, when they are gradually inured to the air, so that in a short time the lights may be entirely removed in fine days. These plants, if kept in a dry airy place during the winter, will be fine for bedding-out in April or May.

The compost I make use of is formed of two parts mellow loam, one part silver sand, and one part leaf mould or cocoa-nut fibre refuse.

The chief error which I believe most people fall into in propagating the *Centaurea* is affording a too copious supply of water, for I do not know of any plant so impatient of moisture as the *Centaurea*. I never sprinkle my cuttings after they are plunged; in fact, they are rarely watered more than once from the time they are put in until they have made many new roots in the fresh soil in which they are potted; for I find that the moisture from the ashes keeps them sufficiently moist.

I have no doubt the method practised by "J. A." answers perfectly well, but the great advantage which autumn propagation possesses is the abundance of cuttings that may be obtained at that season, and it likewise obviates the necessity of keeping a number of plants in pots for the purpose of affording cuttings.

I am not sure if it is generally known that this plant is thoroughly hardy, but with me it withstood the winter of 1866 quite uninjured. I, however, prefer planting every year, as the young plants have a much finer effect than the old ones.—H. C.

I THINK *Centaurea candidissima* far superior to *Cineraria maritima*, useful as it is. I have in damp weather seen the *Cineraria* become nearly green, not so with the *Centaurea*. I have often wondered that we have not seen it more frequently employed for bedding purposes. My experience with it is as follows:—

On the 10th of last October I lifted my plants of *Centaurea candidissima*, took off every side shoot that I could, cut off with a sharp knife the lower leaves, and inserted the cuttings singly in well-drained pots filled with a mixture of sound loam, with three parts sharp river sand. I potted the old plants in the same compost, placed them and the cuttings in a pit, gave a good watering to settle the soil about them, and kept them dry afterwards, with just sufficient warmth to prevent injury from frost. I have examined them from time to time to see how they were progressing. I find to-day (March 4th), that they have all filled the pots with roots, and are ready for being placed in larger pots. By the time for planting-out I expect to have as fine a lot of *Centaurea candidissima* in 5 or 6-inch pots as one could wish. I have no doubt that a spare shelf at the back of a greenhouse would be a suitable place for them, where they could be kept dry and free from drip, which latter is very injurious. I see to-day in a sheltered border some plants of *Ruby Bicolor Calceolaria* that have

No. 1015.—VOL. XXXIX., OLD SERIES.

stood through the winter, so far looking quite healthy and likely to survive, unless we have some very severe weather.—
M. H., *Acklam Hall, Middlesbrough-on-Tees.*

CORDONS—BUSHES—PYRAMIDS.

I HAVE no desire to enter the lists in controversy with such a pomological giant as Mr. Rivers, but to state my experience, and venture an opinion to other amateurs, who, like myself, may take an active interest in fruit-growing. That what I assert may go as nearly as possible for what it is worth, I will commence by stating that I have about twelve hundred fruit trees in various stages of growth, of these forty-six are cordons, and about one thousand bushes and pyramids. I have had only five years' experience, but during that time have studied Rivers, Du Breuil, Bréchant, and others, besides the weekly contents of "our Journal." In learning the theory and practice, I have been more or less assisted by Mr. Rivers, the Rev. T. C. Bréchant, Messrs. Abbey, Pearson, and a host of gentlemen's gardeners, whom I take this opportunity of thanking.

In January, 1865, I had a piece of old meadow land trenched, and planted with 122 bushes on Paradise and Quince stocks, as advised in the "Miniature Fruit Garden" (twelfth edition); of these fourteen are Cox's Orange Pippin. In 1866 the produce was one Apple; in 1867, 115, or two pecks, instead of a quarter of a peck each. Sixty-three trees have as yet produced nothing, twenty-three half a dozen fruit each or less, and twenty-three bore ten or more last year; but I must add they promise, with few exceptions, to do grandly in future.

One word as to labour. Mr. Rivers says that "an active man can lift and replant one hundred in a day." According to my experience, to dig up carefully, trim the roots, and replant in quincunx order or straight lines, one hundred trees are a good day's work for two first-rate spademen.

I much prefer bushes to pyramids for everything except appearance. Whilst M. Du Breuil says the fence must be 7 feet high, and Mr. Bréchant 10 feet at least, Mr. Rivers much surprises me by recommending a wire fence so low as 4 feet for diagonal cordons; planted at an angle of 45° the trees when 5 feet long would be at the top, and though their roots are so close together they will send up shoots 4 feet long in one season, in spite of biennial root-pruning. However, the "average of one dozen fruit each, of very fine quality," certainly is "not a bad return for good cultivation"—such a return as I never have had or expect to have so early as in "the second year after planting;" eighteen Pear trees on a boarded fence having given me a total of only twenty-two fruits last season, though the same sorts do well here as bushes. My crop, no doubt, was unusually bad, but I venture to think that half a dozen each is a far more probable average for such young trees.

The directions for the cultivation of cordons are delightfully simple, the promised produce most seductive, but "all is not gold that glitters." "Cut down to two eyes which next summer produce two shoots, then pinch to four leaves," &c., but sadly too often one of these eyes declines to bud in spite of all you can do, and the only cure is to cut "that melancholy single shoot" down to two leaf buds next winter. Cordons, moreover, require constant attention. Few men are permitted by their occupations to go round their garden every morning with scissors in hand. Most men take a few weeks' leave of absence during the summer, when, unless they can leave them in experienced hands, woe betides the cordons. Some carefully nurtured shoots become a prey to caterpillars, others become so rampant as to defy any amount of pinching, twisting, and "partial fractures." Moreover, all drawings that I have ever seen of cordons represent the growth as equal on the upper and lower sides, whereas, in fact, it inclines mainly to the upper.

Nearly as much space in "our Journal" might be taken up by stating the objections to cordon training as has been occupied by statements in its favour. I would, with all deference to their advocates, amongst whom I rank myself under certain conditions, give a word of advice to those amateurs and market gardeners who may intend planting on this system, 1st, Don't (as *Punch* says to those about to marry), till you have seen some growing and grown for some time. If you have not this chance plant but by way of experiment. 2nd, On the authority of M. Du Breuil and Mr. Bréchant, to which I humbly add my own, do not attempt to grow them on a fence less than 7 feet high (10 feet would be far better). 3rd, On the same authority, do not attempt to dispense with the guide rods. 4th, If you cannot give them constant attention (impossible, I

should say, for market gardeners with their press of work), or if you cannot during your summer absence leave them in charge of an experienced person (improbable, because at present few understand their culture, and practical men have several reasonable grounds against its adoption), leave cordons alone altogether; and, 5th, until English nurserymen will give us maiden trees at something like French prices, instead of from 6d. to 1s. each, we had better let alone the French system. Still, I say, if you have time and inclination, grow a few as an agreeable hobby, but do not expect too much produce or little trouble.

Some readers may infer that I have made a "regular mess" of fruit culture in general, and have read and learnt to but little purpose. I, therefore, feel bound to add that I have trees that for production have equalled, and for shape excel the photographs so familiar to fruit-growers; dwarf trees, overfruited for experiment, have been the admiration of many to whom I have had the pleasure of showing them, and fruits from trees purposely much limited in the number allowed to ripen, have excelled in quality any I have yet seen; but it would be a pity, if out of one thousand trees I could not obtain something worth looking at. As every tree is numbered, its culture and produce separately noted, I can, if such knowledge be thought worth acquiring, state what each sort produces, and the peculiarities of its habit and character.

I have thus honestly given the results of my experience by way of caution to amateur fruit-growers, and in so doing have to my ability discharged a debt of gratitude which I owe to many an amateur and gardener who has depicted his successes and failures for my benefit. I will conclude with a quotation from Mr. Bréchant, which is to my mind the best thing written on cordon training. "For an amateur to take up cordon training, and to endeavour to practise it, irrespective of the exigencies of our rainy skies, and to expect results attainable in other dry and sunny localities, is simply absurd."

I hope as years wear on to give, if you care to have them, further notes on my rapidly increasing plantation of fruit trees.—C. C. E.

[We do care to have them, as we always covet details of practice intelligently conducted.—Eds.]

AIR-ROOTS ON VINES.

If the readers of this Journal are like myself, any experiment connected with the Vine will always be of interest to them, even if it only confirms that which has been previously advanced by other writers.

For the last two years I have made notes of observations taken during a succession of Vine-forcing in order to obtain some reliable information as to the causes of air-roots on Vines, the effect they have, and the treatment to prevent their appearance. As a rule, Vines that are forced put forth more air-roots than those that are not forced, or which are allowed to grow naturally. This I attribute to the unequally balanced action between the roots and branches, in other words, to the deficiency of supply as compared to the demand brought on by the unseasonable time at which the roots are called upon to act, and the great difficulty experienced in keeping the temperature of the roots on equal terms with that of the branches. I am more convinced of this being the case, from starting a fresh house of Vines every month from December to April, and as the season advanced the proportion of air-roots diminished.

Over-cropping is another very frequent cause of the production of air-roots, whether the Vine is growing naturally or artificially. I have found that if a Vine is placed in the most favourable situation, both for its roots and branches, it does not root or grow with the same vigour every year, consequently it is not always able to carry a full crop, but it is too much the custom to take one from it regardless of consequences; this weakens the constitution, and Nature seeks to assist herself by the production of air-roots.

This brings me to the second part of my subject—viz., the effect air-roots have upon the Vine. Although I believe they do afford a slight amount of assistance to the Vine during a certain stage of its growth by feeding upon the moisture in the atmosphere of the structure, yet I have proved that to allow them to grow is to bring disappointment to the cultivator and injury to the Vine, for as soon as air is admitted more freely, and the atmosphere kept drier to favour the colouring process, the air-roots dry up and die. The Vine thus receiving a serious and sudden check, inferior-coloured Grapes are the consequence.

Having convinced myself through experiments that stem-roots upon Vines are an evil, I have found the following treatment effectual in lessening the tendency of the Vine to produce them.

First, take care that the soil of which the border is composed is thoroughly well drained, and of such a nature that when the roots are penetrating it for food they may take up that which is most suitable to their requirements. I have found a rich soil injurious to the Vine when young, and if the latter is treated on the restrictive system it induces a plethoric condition of growth not required for the production of good Grapes. The soil had better be too poor than too rich. Encourage the roots near the surface, and if they are in outside borders, protect them from frost and superfluous moisture.

With regard to Vines intended to be forced, great care should be taken to induce root action as soon as the buds burst into leaf; for if the leaf become developed before the roots can supply it with sap, it must receive some injury from the want of nourishment. Avoid a high internal temperature and an excessively moist atmosphere, especially in dull weather and in the early stages of the Vines' growth. When the surrounding atmosphere is cold, and strong winds prevail, root action is less active, especially in outside borders, through the temperature being reduced. At such times I have found it beneficial to reduce the interior temperature in proportion also, which keeps the demand and supply upon more equal terms.

There are several other things besides those above mentioned, but of a less serious character, that will arise during the progress of the Vine through its different stages of growth, but the effect they have upon air-root production must depend in a great measure upon the skill with which the Vine is cultivated.—THOMAS RECORD, *Hawkhurst, Kent*.

FLOWERS OF OTHER DAYS.

"Be not the first by whom the new is tried,
Nor yet the first to lay the old aside."

I AM rejoiced to see that several of your correspondents are ably fighting the cause of that shamefully and sadly neglected class, the herbaceous perennials and biennials. It is marvellous to me how any real lover of flowers can do without them. I have nearly as many as my little garden will hold already, but mean to go on cramming it as long as there is any available space. The difficulty is to get hold of many of the best old-fashioned plants; they are almost lost to cultivation, and it is only by making friends with such lovers of the olden time as your correspondent Mr. Mellish seems to be, that you can obtain these herbaceous gems.

However, I think we are waking up, and fine fellows though they are, we are not going to let the ribbon gardeners and sub-tropical florists have it all their own way, and we shall soon, I hope, see some of those glorious old herbaceous gardens, the beauties of which Hill and Milton loved to describe, and which Curtis delighted to paint.

To all lovers of beautiful herbaceous plants let me recommend *Michauxia campanuloides*, a tall Campanula-like plant, with large conspicuous white blossoms, somewhat like a Turk's Cap Lily. I saw it last autumn, at Glasnevin, several feet in height and making a magnificent appearance. I have just been planting out a bed of strong young plants from which I promise myself much pleasure. It is a biennial, and grows very freely from seed.

Saponaria ocyroides and *Silene alpestris* make most lovely pink and white beds in May, perfect sheets of bloom.

No herbaceous plant has afforded me more pleasure this season than *Primula denticulata*. I have several plants now almost smothered with trusses of lovely pale mauve flowers. One plant which has been out in the open border all the winter, with the protection of a hand-glass during severe frosts, has as many as seventeen or eighteen trusses of bloom. It increases with great rapidity.

Primula purpurea, a closely allied but very distinct and lovely species, is quite hardy, and comes into flower as soon as *P. denticulata* is over.

Primula altaica, or *amœna* as some florists call it, a species closely allied to the common Primrose, is now very lovely, its large mauve flowers with a yellow eye come in such dense masses as almost to conceal the leaves. I always have a bed of *Primula cortusoides*, and very beautiful it is to look at, and last year I tried a bed of *Primula involuerata* (Munroi), and was not at all disappointed. Its pretty French white flowers

formed a pleasing contrast to the almost magenta hue of its congener, *P. cortusoides*. I have succeeded in keeping *Primula erosa* (Fortunei), out in the open border all this winter with the protection of a hand-glass during severe frost, and it is now coming into bloom.

Primula cortusoides amœna, in my opinion quite distinct from *cortusoides*, has no protection at all, and is coming up green and healthy, and *Primula verticillata* is alive and well.

Can any of your readers tell me where to obtain the old "Double White Cowslip?" I have tried in vain. Mr. Youell, of Yarmouth, used to have a large stock, but has lost them all.

Sophora [*Baptisia*] *australis* is another beautiful old-fashioned flower I wish to procure, and I should like to hear of some one who grows *Narcissus triandrus*.

Every one should grow that lovely little perennial, *Sisyrinchium convolutum*. It keeps opening a succession of yellow stars all the summer.—H. HARPER CREWE.

AMONG the too-much neglected shrubs are the following:—

BERBERIS JAPONICA.—I have about thirty plants, some in warm, some in cold situations, all of them in a good, light, but unprepared soil, and some of them exposed to the whole day's sun, but I find them do about equally well in all situations. The winter of 1866-67 damaged a few of them slightly, but they have all recovered. They are now in bloom.

BUXUS BALEARICA.—Fourteen plants were all damaged, some killed outright, and most of them to the ground, by the hard frost of January, 1867. Only two, in very sheltered positions, now look tolerably healthy, and I fear the plant is one of the least hardy evergreens.

Among the evergreen shrubs, not *Couifera*, which here suffered most from the severe winter of 1866-67 (my thermometer was about zero), I may enumerate *Arbutus*, *Bays*, and *Laurustinus*, both sorts, nearly all cut to the ground; *Colchian*, and in some places common *Laurels*, *Garrya elliptica*, *Euonymus japonicus aureus* fol. var., and *Double-blossomed Furze*; the last-named alone being in most cases killed, not twenty out of fifty plants remaining.

Two young *Cork* trees were undamaged. A *Piptanthus* left out without any protection, though killed down, survived and blossomed last summer better than plants kept in the house.

I will with pleasure give you my experience of other shrubs if you desire it, but I especially wish to direct your attention to the little-known hardiness of *Chamaerops excelsa*, a name which I hope to see, and which deserves to be, at the top of your next article. I planted one in the autumn of 1864, and another in 1865, the former in a somewhat sheltered, the latter in an exposed situation. I have never given them any sort of protection. One was somewhat damaged in January, 1867; the other, the larger, not in the least, and it grew strongly last summer. My only *Chamaerops humilis*, also unprotected, was much damaged, but will recover.—A SUBSCRIBER.

AUCUBA JAPONICA.

IN reply to "HARRY'S" inquiry in the Journal of the 5th inst., I beg to state that artificial impregnation of the flowers of our old *Aucuba* is unnecessary, moderate proximity of the male plant being quite sufficient.

There may be seen here at present two good-sized plants of our old favourite loaded with clusters of large, beautiful, scarlet berries. These bushes were fertilised by a small plant in a pot being placed a few feet from them when in bloom last spring, and the result proves to be perfectly satisfactory; for, not only are the clusters largely distributed on the outside of the bushes, but they are also to be found in masses in the interior; thus showing a wonderfully minute and extensive distribution of the pollen.—J. SAYERS, *Gardener to T. Bewley, Esq., Rockville, Blackrock, near Dublin*.

EFFECT OF CROSS-IMPREGNATION ON SEEDS.

I HAVE the Runner Kidney Bean Zebra; and should your correspondent "LANSLOWNE, Worcester," page 191, March 5th, not succeed in obtaining them nearer home, I shall be happy to present him with a few—six dozen or so, if he will tell me how and where to send them, and will pay carriage. A few would go by post. I have another variety of the same character of Bean, whose ground colour is dark (a sort of mahogany), with the same black stripe.

This subject has brought to my remembrance a singular freak of nature which occurred in my garden last year. I received from the Royal Horticultural Society, through our local Society, my share of a distribution of choice seeds, &c.; and among them were some half-dozen small black Beans, named Black Wax Runners, about the size of the white dwarf Bean. These I planted carefully; and in order to make a line, I put in with them some fine large white Runners. Guess my surprise, on opening the ripe pods of these latter for seed, to find jet black Beans the full size of the white ones. I can only account for this by supposing the bees to have been busy among the blossoms, and to have carried the pollen from flower to flower. Would this be your opinion, and is it a rare occurrence?—ALF. TIDY, *Manor Cottage, Noirmont, Jersey.*

[Mr. T. A. Knight, the distinguished first President of the Royal Horticultural Society, observed a similar effect produced on Peas by cross-impregnation.—Eds.]

FRENCH ASPARAGUS CULTURE.

ASPARAGUS, as everybody knows, is grown very extensively in France. Every individual in possession of a piece of ground devotes a portion of it to its growth; so that, travel where you will—from Dunkirk to Perpignan, or from Strasburg to Brest—it is more or less seen. In fact, everybody grows, cuts, and sells it. The department of Seine-et-Oise, however, is the most talked-of portion of France, as having produced the largest heads of this vegetable. The Lhéran family of Argenteuil have shown them 4 inches in circumference; but I do not look on this as the criterion of good cultivation—quite the contrary, as I know from experience that those overgrown heads of Asparagus, like all coarse overgrown vegetables or fruit, are not near so relishable and well-flavoured as the medium-sized, that have been grown on more wholesome and less-manured ground. Many French gourmards, however, think otherwise, and relish these coarse Asparagus with great gusto, more particularly when they hear that the Imperial Horticultural Society of France has crowned them with a gold medal, which they do frequently.

It is not my purpose here to criticise the flavour of this wholesome vegetable. Some are very fond of it; others, again, have an aversion to it. I think all will agree that we have a much more wholesome and nutritious vegetable in the Marrow-fat Pea—altogether a cheaper and more serviceable vegetable for the people. This is a vegetable quite unknown amongst the people of France; so also are the Scarlet Runner Bean, the Sea-kale, a good spring Cabbage, and Broccoli; scarce also are a decent Onion, a good Potato, a fine Cucumber, and—about the most useful of all for poor people—a good Leek. The Asparagus Kale, a most profitable hardy spring vegetable—nearly as good to my mind as Asparagus itself—is never to be met with. A good Turnip also is a scarce vegetable. These are a few of the good things that are to be found in nearly every cottage garden in Britain, while in France they are either scarce or nearly unknown. As a rule, the vegetables most common in England are scarce in France, and *vice versa*; but not to the same extent in the former, for I know of no vegetables common in France and comparatively scarce in England, except Asparagus and Lettuce, and the latter only so in winter. I had nearly forgot to mention the Rhubarb as also another excellent addition to our English spring dainties when well grown. I remember my wife once giving a spoonful or two of this vegetable, stewed with sugar, to a Frenchman, who declared he never tasted anything so nice in its way; eaten as he ate it—with a piece of bread, and with a flavouring of Cloves—it is certainly as nice as stewed Pears or Apples.

The culture of Asparagus having become quite a mania in France, it may reasonably be supposed that the mode of culture adopted by the French gardeners is perfect. I believe it to be so; but, at the same time, the soil of Seine-et-Oise is peculiarly well suited to the requirements of the Asparagus root; just as the soil in the midland parts of France is suited to the requirements of the Vine; and with the hot sunny days and cool dewy nights, with ordinary care in destroying weeds, and a few other minor attentions, it lives and flourishes to a very prolific degree, and continues doing so, with little or no manure, for thirty years. I have seen the roots of Asparagus 8 feet deep in the inexhaustible calcareous beds of soil so common in this department. It will be seen, then, that the system in vogue is very greatly aided by nature, whatever may be said to the contrary; of course I am speaking of out-door culture.

In forcing an *aspergerie*, as it is termed here, or a field of Asparagus, if Vines have been growing on the land previously, no outlay is necessary further than lining the ground off and throwing out trenches 4 feet apart, measuring from the middle of the trench. The depth is regulated according to the consistency of the soil—or, in other words, the lighter the soil the deeper the trench, and the heavier the soil the shallower the trench; in either case it must not exceed 18 inches in width; this allows the ridges to be cropped with light crops of Haricot Beans, early Potatoes, and the like.

Every grower raises his own roots by sowing selected seed. The largest and earliest ripened seeds are chosen. A bed of sandy unmanured soil is lined off, forming little furrows 12 inches apart, and the selected seed finger-and-thumbbed in at least 4 inches apart. After the rake has been drawn over all, the seeds will be 2 inches from the surface. This operation is done on a dry day in February. By the end of March, a hoeing before the seeds germinate tends to keep the seed beds clear of weeds, after which the young plants soon begin to show themselves above ground. The end of April and beginning of May bring hot dry weather. A slight mulching with decayed manure is now applied. After this nothing more is required but a little hand-weeding and repeated waterings in very hot weather throughout the year. At the period when they may be termed yearlings with half an inch of growth, which will be about the end of March, is the time when the planting in the *aspergerie* takes place.

The previously prepared trenches, having been well seasoned by a winter's frost, are now run over with a coarse rake, levelling the coarse clods of soil, which fall to pieces like slaked lime, and at the same time a good portion of this aired soil from off the ridge is sent into the trench. With this and a little rotten manure, little molehills are formed 16 inches apart. Three persons are necessary for the work. One takes his place at the seed bed, lifting carefully with a fork the young roots and laying them in a basket, screening them from sun or winds with his blouse, and carrying them to the principal in the trench. This individual takes them one by one, and in a very neat and expeditious manner lays each root on a molehill—every root being laid out like an expanded hand. The third individual comes behind with a basketful of dry prepared rich soil. A good double-handful is placed gently over each root, and the planting is terminated.

About three weeks after this the young roots are pushing vigorously, and the three-pronged hoe-rake is again brought into use and run through on the ridges, allowing again a little of the soil to fall into the trench. The trenches are then in turn gone over with the same instrument or a common draw-hoe, levelling the soil, and cutting up at the same time any weeds; any such found around the crown of the Asparagus root are pulled out with the hand. With these slight earthings-up, and an occasional hoeing, nothing more is required for this year. The ridges, of course, are planted with Potatoes, salads, Beans, or Carrots, which require at the same time attention.

In the month of December, if a good day can be found, the soil that has accumulated on the roots by the hoeing and walking on the ridges, is taken away by a short broad-bladed hoe and laid again on the ridge. The crowns of the Asparagus are laid bare, and again a handful of light rich soil is put on them. Some prefer a quantity of rotten manure for this purpose. Nothing more is done till the month of February of the second year, when the ridges are again dug and cleaned for the year's cropping.—H. K. (in *Gardener*.)

(To be continued.)

MUSHROOM CULTURE.

I SEND you a box of Mushrooms, and as my mode of treatment is somewhat different from "G. Egerton's," and I have practised it successfully for many years, a few explanatory words may be acceptable to some of your many readers.

In the first place we procure as much horse dung, long and short together, as will make one-half the bed; we next obtain enough droppings to cover the bed all over 2 inches thick; then we throw each together in separate heaps. In a few days the heap will require turning, which is repeated here three times during a fortnight, or, if thought necessary, a fourth time, when it is thought sufficiently sweetened.

We make the beds in the following manner:—We use, as fresh as can be obtained, enough dung from the yard to make the bed nearly 1 foot deep, shaking out some of the longest

bitter, beat well, and cover it with an inch of soil, which is also well beaten down. We next put on the dung, as mentioned above, well beating it down as the work proceeds; then we finish off with the droppings, leaving all as firm as possible. In nine days or so the bed will be fit to spawn, or have a temperature of from 75° to 80°. We soil it at the same time, leaving it as firm and smooth as we can.

I should mention that our Mushroom house is a cellar, and the beds are all made on the floor, some in the form of a ridge and some nearly flat. We cover them with hay, and never water till they decline bearing.

I do not suppose there is anything new in this system, for it was taught me by my father, who was under the late Mr. Mearns; but any of your readers who may try it will not be disappointed with the result, as the sample sent will, I think, be sufficient to prove.—*JOHN GOGAN, Gardener, Lea Castle, Kidderminster.*

[The Mushrooms were well grown, densely crowded, and of all sizes from that of a pea up to that of a crown piece, but there is nothing new in the system of culture; it will do well under the superintendence of an experienced man, like other rough-and-ready modes, alluded to by Mr. Fish and others. One circumstance much in your favour is having the bed in a cellar with its next-to-uniform temperature and moist atmosphere. Beginners we would advise to prepare the dung a little more, and have it dried, without too much heating it. Too much heat is that by which most beginners lose their crop.—*EWS.*]

MY ORCHARD-HOUSE JOURNAL.

It is, I think, probable, that some of your readers may be interested in the periods of blossoming, setting and swelling the fruit, and other matters pertaining to the culture of a large collection of orchard-house trees in pots, the trees from five to fifteen years old. I propose, therefore, at intervals to give in your columns a short journalistic account of the doings of my trees, commencing this spring of 1868, and continuing it, if permitted, through the season.

Feb. 5.—The "Mumé," a Japan Apricot in full bloom—a charming tree. Its calyces are of a deep crimson, and its petals delicate pink. This is the earliest of all stone fruits. Last season it blossomed in January, towards the end. This interesting tree bears a small compressed fruit, yellow, and something like an Almond in shape; it is acid and bitter, and although the tree blossoms so early its fruit is not so early as Oullins Early Peach Apricot.

Feb. 26.—Apricots in full bloom. The old trees perfect masses of blossom—most beautiful. Seedling Apricots, of which there are some forty in number, differ by several days in their periods of blossoming, thus giving hopes of variety in their fruit. They are full of blossom, and full of interest.

March 9th.—Apricot blossoms have shed their petals; every blossom seems to have set, so that the thinning of the fruit will be a tiresome business. The seedling Apricots vary much in their time of blossoming, many are now in full bloom, while others, standing side by side and under the same treatment, have not opened a bud.

The blossom buds of Peaches and Nectarines are bursting fast. I observe to-day a curious anomaly, the Lord Palmerston Peach, one of the latest, is nearly in full bloom—earlier than any other. Its large Anemone-like flowers, like those of its parent the Pavie de Pomponne, are most conspicuous and ornamental.—*T. R.*

WARNING TO INTENDING EMIGRANTS.

WHAT a happy people we Britishers ought to be; but we have been trudging on in the easy ways so long, that we do not wait to think of the comforts and blessings we daily enjoy, and until we go to foreign lands, or the distant colonies, and are knocked about "from pillar to post," and worn out in fighting continuous disadvantages, we cannot thoroughly realise the fact that ours is, indeed, "the happiest land upon earth." We hear continually of the advantages possessed by other lands, and certainly "one side of the story is good until the other side is told," but in sober truth I wish to warn those who are needlessly discontented with their lot here, and to prevent them, if possible, "jumping out of the frying pan into the fire." As I am now addressing my brother horticulturists, I shall confine myself simply to horticultural subjects, and endeavour to show a few of the drawbacks as exemplified by my own ex-

perience in various parts of North America, both in the British colonies, and in the United States.

A careful and energetic person in the western part of the State of New York, some years ago planted an orchard of dwarf Pears. They were fine trees, well planted, and the ground in excellent order. For two seasons they did well, and promised handsome results, but there came one of those fearful winters sometimes experienced in those latitudes, when the mercury falls to many degrees below zero, and out of nine hundred trees not six survived. The hopes of the planter were destroyed at one sweep. The intense frost had killed all the Quince roots; some of the trees had sap enough in them to open the buds, and then they went off as though a fire had passed through them.

Another cultivator had a plantation of native Vines, in number about four thousand. They had grown well for two seasons, and a similar winter to that just mentioned destroyed them all. The ground had frozen early in the autumn after heavy rains, and was surcharged with moisture. During the month of January a rapid thaw set in, and the plants were heaved up, all the fibrous roots being broken, and nearly all above ground. Before they could be covered or replanted the ground froze again; and as almost the whole plant, root and branch, was exposed to the action of frost and sun, the result was the total destruction of the vineyard.

Another fruit-grower had a fine young Apple orchard, six years planted, and in consequence of the severity of the weather the field mice were very much put to it to find food. The result was, that the vermin barked nearly every tree in the orchard, and most of them died, and even the survivors might have gone too, for all they were worth afterwards.

An enterprising English farmer, who has had plenty of experience in the management of hedges at home, has been trying for some years past to grow a live fence round his garden, but all to no purpose. Do what he may the mice find their way to the plants every winter, and girdle them most effectually. So persistent and so numerous are they, that the hedge project has had to be abandoned. His case is not a solitary one.

All these unfortunates are careful and tidy cultivators, and their mishaps have come upon them through no neglect on their part, but have been positively unavoidable, having been brought about by natural causes.

With an average temperature during the winter months of about 10° Fahr., a gardener can well imagine what an amount of boiler power and piping must be required to keep the frost out of glass structures, and at all the establishments with which I am acquainted the fires have to be made up once or twice during the night. Then, again, a great heat must be kept up for fear of a sudden change outside, and the dryness of the atmosphere is productive of all sorts of insect pests. Nowhere in America have I seen such green, short-jointed plants, as are to be found in English houses. During the winter the American plants look drawn, and pale in colour.

As regards out-door operations, for at least four months in the year not a spit can be turned, and crops of every kind must be under cover before the ground freezes, and it often happens that for the best part of six months stern winter holds everything with an iron grasp.

Then, when seed time comes, there is literally no time for work. Within a fortnight everything must be done, and it is then a long time to wait for the crops to come in, for there is no relay or succession of garden products through the winter as in England. The summer comes at once, and with it intense heat, and often protracted drought, or else such violent rain storms as prostrate everything, and cause much damage to growing crops.

Then, the grower of fruit has the Tent Caterpillar, the Codlin Moth, the Curculio or Plum Weevil, the American Blight, the Fire Blight, the Peach Borer, the Gooseberry Caterpillar, and many other enemies to battle with. The grower of vegetables the Striped Bug, the Chinch Bug, the Squash Bug, the Onion Maggot, the Cockchafer, the Cut-worm, the Sphinx Caterpillar, and many other desperate and resolute foes. The agriculturist has to fight with Rust and Smut, Hessian Fly, Wheat Midge, Cut-worm, Grasshopper, and many other pests; so that in addition to the extremes of climate, there are many other enemies to meet.

Now, I do not mean to say these difficulties are insurmountable, but what I wish to show is this, that in running away from discomforts and adversities at home, we do not know how much greater we may meet by going abroad. After many years' experience, my advice to all is, *STAY AT HOME.* I shall be glad

to reply to any inquiries that intending emigrants may wish me to answer, but at the same time would say that my decided opinion is recorded above.—W. T. G.

TRANSPLANTING LARGE TREES AND SHRUBS.

The practice of transplanting large trees and shrubs being very general, I will offer a few remarks on the simple contrivances which I have found sufficient for the purpose of removing trees and shrubs of from 15 to 30 feet in height.

The appliances necessary, in addition to the usual spades, picks, shovels, &c., are a couple of picks with one end for the purpose of working under the ball; two or three ropes; half a dozen or more slabs of various lengths, from 18 inches to 3 feet, notched at the ends to hold the rope (these are used in binding the ball of earth, but in some soils this need not be done, whilst in others it is absolutely necessary to secure the ball in the best possible manner); and a sledge of sufficient size and strength: $4\frac{1}{2}$ feet long and $3\frac{1}{2}$ feet wide is a good useful size.

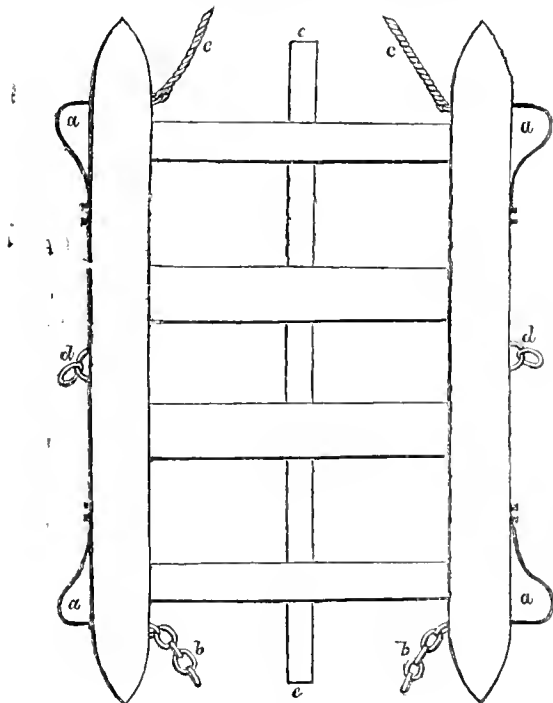


FIG. 1.

a, a, Staples to fasten the horses to. *b, b*, Chains with rings for binding on the sledge. *c, c*, Ropes for the same purpose. *d, d*, Rings for lifting with jack. *e, e*, For struts—never used.

The sides or runners of the sledge (*fig. 1*), should be of good well-seasoned timber 6 inches by 4, and the ends well turned up. There should be four slats or bars across, dovetailed or morticed into the sides, and about a foot from each end an inch iron rod. On the outside of the side pieces, at a convenient distance from the ends, should be fixed good strong staples, *a, a*, of sufficient size to admit of almost any hook for the purpose of attaching the horses. Inside the ends, at one end of the sledge, two chains, *b, b*, 2 feet long, with a ring at the end, should be attached one at each side. At the opposite end two ropes, *c, c*, one at each side, and 3 yards or more long, should be properly fastened. These are for binding the plant on the sledge, which is done thus:—

The ropes are put through the rings at opposite corners, across the ball, round the bole of the tree, drawn tight, and made fast. Hay or some other soft substance must be used to prevent the ropes barking the plant.

In opening a trench round the plant to be removed regard must be had to the size and age of the tree, the nature of the soil, and other circumstances. It is, however, advisable to commence a trench which is wide enough, for the work will be done much more easily and expeditiously by having sufficient room to work. Two or three feet on one side of the plant

should be left untouched until the sledge is put under; then that portion of ground must be cut through, and the plant will sink down on the sledge. Open the trench to a good width, and be careful to go sufficiently deep to be beneath the fibrous roots. A depth of 3 feet is usually sufficient to allow the bottom of the ball to be cut, so as to admit of the sledge being put under.

In working out the plant, work at the bottom of the trench and beneath the ball with the pick; then reduce it with the same tool, which should not be too pointed, otherwise it will be apt to split the roots, on the preservation of which in a very great measure depends success.

Having reduced the ball to the desired size, work clear beneath. It is, however, a very good plan, after having worked some distance under the ball, to shore it up with anything at hand; a good stout slab placed along the side, and propped in the centre, is as good as anything. After placing the sledge under the ball, cut through the part left, secure the ball with the ropes, and it may then be drawn to the place where the tree or shrub is to be planted. If, however, the plant be likely to sway over, two ropes held by men will prevent its doing so.

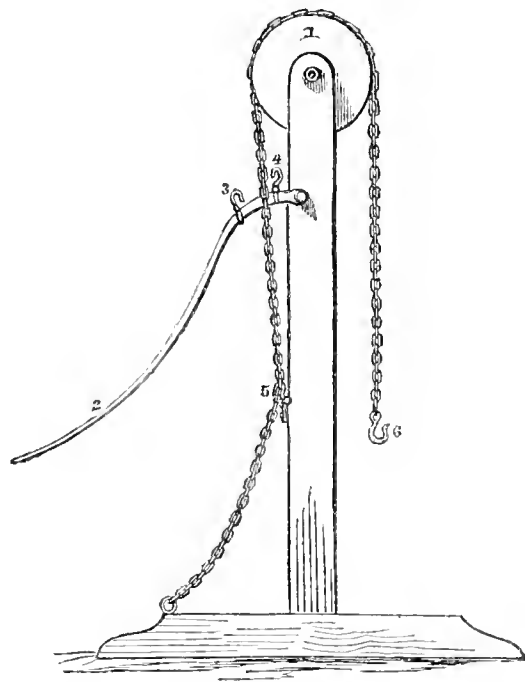


FIG. 2.

1, Grooved wheel. 2, Handle. 3, Hook for lowering. 4, Hook for lifting. 5, Hook for fastening chain when shifting the handle. 6, Lifting chain.

Arrived at the plant's destination, the horses should walk through the hole, stopping when the plant is in the centre. Then drive a strong crowbar firmly into the ground, put a chain round the ball, placing a good broad stout slab betwixt it and the earth, make the chain secure to the crowbar, and the horses will draw the sledge from under the plant.

The same care must be taken in preserving the roots in planting as in taking-up; spread them all carefully out, working fine soil well in amongst them, and ramming it firmly down. Proceed in this manner until the tree be planted; then give a good watering and mulch. Stones are as good as anything for the purpose, either for summer or winter.

Three stakes of this shape *1* should be let into the ground at the time of planting, the T-part downwards. Galvanised iron wire should be fastened to the tops of the stakes, which should be level with the surface of the ground, and the wire should be fastened a good distance up the tree to prevent the wind waving it.

A far better plan than drawing the plants on the sledge is to have what we name tall jacks (*fig. 2*). They consist of a foot, an upright, a grooved wheel on the top, and a handle with two hooks, one about 4 inches, the other about 6 inches from the upright. A hook is also fastened in the upright about 4 feet

from the bottom. The jacks are about 8 or 9 feet high. A chain passes over the grooved wheel on the top, the hook is made fast to the weight to be raised, the hook nearest to the upright on the handle is hooked in one of the links of the chain, and the handle is worked in the same manner as a pump handle. When the handle is down the chain is made fast to the hook in the upright until the handle is raised. The hook farthest from the upright on the handle is for letting the weight down. When these jacks are used two are required, one on each side of the plant, and a strong staple is required in each side of the sledge to fasten the hooks to.

When the plant is lifted a sufficient height a low-wheeled truck is backed under it by manual power. The bottom of the truck is flat, and is above the tops of the wheels. The trucks used by masons will answer the purpose. Of course lifting the plant off the truck is simply a repetition of lifting it on.

With these few simple appliances a practical planter may remove plants of any reasonable size with the minimum risk of failure. I had forgot to state that the sledge should be boarded to present a smooth surface, and to prevent the soil falling from the ball.

I would feel greatly obliged for any information on the subject of transplanting.—F. FLITTON.

[The latter part of the communication, that relating to lifting by jacks, at least with their assistance, is the most important. In practice we have generally found that all binding of balls with chains and slabs is only a hindrance to a good workman. A very good moving machine that would pass through narrow gateways was shown and took a prize at the International Horticultural Exhibition of 1866. We all knew something of large planting machines where great force is used to raise the tree. Unless in particular cases, planting large trees never will answer as a matter of pounds, shillings, and pence.

For all trees and shrubs too heavy to be carried and placed in a barrow, or that are heavy enough for half a dozen to ten men to move, nothing is better than a smooth-surfaced platformed sledge, such as has been several times described. In the case of trees from 25 to 35 feet in height, nothing in general practice suits better than a pair of low cart wheels connected together by a stout axle, and a pole fixed in the centre of the axle. When the tree has been nearly loosened all round, and the axle is brought up to the stem, the pole is raised against it and securely fastened, with mats or other materials between the pole and the stem. When the pole and stem are alike pulled down, ball and roots rise in the air, and may be tied round with mats, cloths, &c., if deemed necessary, and may be set down in the new place without bruising or breaking the roots. In removing trees even of such a size, two modes may be resorted to and with much the same success. In the first place a ball should be secured by cutting a trench all round the tree at from 20 to 24 inches from the stem a year or two before lifting; secondly, if this is not done, but the plants are taken up and planted without any preparation, then the roots must be searched for and saved up to their extremities. In this case a little ball will be all the better, but a large ball is of less consequence. In any case, unless previously prepared, there are but few fibrous roots near the bole of the tree. The ball when obtained helps to secure the tree in its new position. The long traced-out roots do the same. In rather thick plantations it is almost impossible to have these long roots carried out without injuring them. Unless for producing an effect at once, it is seldom that planting large trees answers in the long run. We have helped to plant trees 30 feet in height, and to plant others 10 feet in height, and the latter ultimately beat the older ones.

DESTROYING CRICKETS.

HAVING observed lately several inquiries respecting the extermination of these pests, I write to state the means I have employed with much success, although I am sorry to own I never entirely got free of them. In small jars, such as are used for preserves, I placed at the bottom a little treacle and water, at about the consistency of limewash, and plunged them to the brim, or placed them on something to assist the enemy to his own destruction. The pots should be examined every morning, and the crickets cleared out. If the weather, or house, be hot, the mixture will need changing every third day. When it begins to ferment the crickets will not enter. The dead crickets must be cleared away, or they will only serve as food for their more fortunate cannibal relations. I may add

that in most cases these torments are brought with the cinders from the hall.—A. S. K.

POTATOES.

THERE are some things, it seems, about which it is dangerous to write. If you have the honesty to condemn certain flowers or plants because you do not think them worthy of all the high-flown characters that they have received, you are at once supposed to be influenced by some sinister motives, and your wisdom, and, it may be, your integrity are questioned. There are other things which every gardener takes an interest in; and if you write about them there are some good people who fly in the face of all injunctions to the contrary, and write you no end of letters privately about them. Such has been my experience. I wrote a few weeks ago about Potatoes. It was a very humble attempt to give my own experience of sorts which I had tried; but alas! it involved me in consequences I had not dreamt of. Letters came to me from all directions—France, north and south of England, &c., some good people evidently taking me for a market gardener, who wanted to make something out of my experience. Could I sell a few stones of this kind? a gallon or so of that? while others, with the most insinuating language, begged a few tubers of one kind or another. Now I must protest against this on behalf of my fellow workmen and myself, for it is most annoying. If one takes no notice, it is looked upon as rude; if you refuse, you are regarded as a churl; whereas if you accede, your own stock would be soon reduced to a minimum. I mention no names, because I do not wish to put people in the pillory; but I would beg my correspondents, male and female, to rest assured that were it possible I should most willingly oblige them, but that it would entail an amount of labour and time for which I am totally unprepared, and that it is neither rudeness nor churlishness that has left their letters so long unanswered.

With regard to your kindly disposed correspondent who questioned my statement about Paterson's Victoria Potato, that is quite another matter, and my reply to him is a matter of pleasure as well as duty. Had he referred to my paper I think that he would have found that I did state the soil and situation in which the Potatoes were grown. I would now supply a few facts about them which may help to make the matter clear for him. My friend, Mr. Banks, sent me last year a number of Potatoes to try, simply numbering them, in order that I might test them. From amongst them I selected one, which turned out to be Paterson's Victoria, and obtained from him a few good-sized tubers for planting. The situation chosen was light and airy, the soil a rich friable loam. The produce was very good, but not equal to Mr. Banks's in mealiness or in flavour. I take it, then, that, like all Paterson's, it is a field Potato, and not a garden one; and from a great many concurrent testimonies I gather that it is the only one of his varieties that is really worth anything. Yet what great things were said about them! His "brither Scots" gave the firm a grand dinner. He was extolled as a benefactor of his species, and a large quantity of the Potatoes no doubt was sold. It seems, then, very ungracious to say you do not believe in what all the world thinks good.

And now for another little matter personal to myself. Like my friend Mr. Radclyffe I am about to change my quarters, and am moving into a more quiet country place than that which I have for so many years occupied. I have so long, however, contributed to your pages from my present place of residence, that I must ask permission to retain the *nom de plume* I have so long assumed, and still be as before—D., Deal.

NEPETA TEUCRIFOLIA FOR BEDDING.

NOW that the tide of taste has fairly set in in favour of hardy plants suitable for bedding, it is curious that the merits of this plant as a bedder have not been publicly recognised, so far as I have seen. I have grown it in quantity for this purpose for the last seven years, and every year it gains more favour here. The individual flowers are certainly poor enough, but as a bedder it has everything to recommend it, so far as my experience has gone on a moist soil—colour, habit, and duration, when properly managed; and, moreover, it is hardy as a Willow. Its colour is beautiful and chaste in lines or masses, being a warm lavender or mauve colour, something like *Viola cornuta*, but with a shade of crimson in it. Its habit is dense and spreading, upright in the middle of the plant, and lying down on the soil all round

like the Variegated Alyssum. Its duration of flowering is from May to December without fail, and gathering in profusion of bloom and colour to the last.

Its management is extremely easy, but it must not be left to itself, as herbaceous plants are generally. It is best raised from cuttings every year, the old plants being thrown away; and with half the kind treatment given to Purple King Verbena, it will flower longer, and will rival or excel it in show throughout the season. I put in a batch of cuttings in fine soil in the open border about September, in close nursery lines, and every cutting strikes before winter. In March we transplant the young plants to where they are to remain; or if that is not practicable until bedding time, we give them more room in the border, when they make nice plants by the middle of May.

We use it in lines or masses on the panel system. Edged with a broad band of Cerastium it is beautiful; mixed with Scarlet Pelargoniums or any strong Verbena; or with Mangles' Pelargonium, Alyssum, or Saponaria, it is also fine. The Nepeta can be used with fine effect in combinations where Verbena venosa is used, and will be successful on soils where the Verbena is useless—that is, cold and heavy soils. This plant is common enough in most gardens where old herbaceous plants are not entirely banished.—(*The Gardener.*)

GALVANISED WIRE TRELLISES FOR GARDEN WALLS.

I AM about to state how we have endeavoured to avoid driving nails into walls. In those of this garden, whoever built them, very inferior mortar was used; and, besides, the wall is hollow, being built brick-on-edge, having, say, at every 12 feet or so, a solid piece by way of a tie. This might have answered the purpose had the mortar employed been made of good materials and been used when in a proper state. The question, therefore, was, how best to preserve the walls for use without going to the expense of pulling them all down and rebuilding them. In the long-run this might have proved the best mode of surmounting the difficulty.

As driving nails into the walls displaced the bricks we thought of using galvanised wire netting; but here a difficulty arose, for such rotten walls would not hold any large nail if driven in between the bricks set on edge, and nails in the solid pieces of the wall would not afford sufficient support for the wire netting. After consultation it was determined that slight battens should be fastened to the walls, each having two slight rods of iron passing through it. Where we have trees upon both sides of the walls, the battens are fastened to the walls on opposite sides by the same bolts; and where there are no trees trained against the outside of the wall, at each bolt is screwed to the wall a piece of iron long enough to pass over more than two courses of bricks. Of course, before the netting was fastened to the battens the wall was repaired, and washed over with proper lime, the glaring whiteness being softened down.

The battens are about 1½ inch thick, and 2½ inches wide, and are placed at about every 5 feet distance along the whole length. Over the top of these upright battens another, much the same in strength and appearance, is nailed down. The upper side of the wire is fastened to this; but the bottom of the wall being firm enough to hold large nails, one or two of these driven into the walls between the upright battens hold the wire quite firmly. According to the height of the wall, and how the different widths of netting suit, a space of from 3 to 5 inches is allowed between the pieces of netting. These in the 5-feet distance between the upright battens have three or four ties of galvanised wire, thus making all secure.

This method of attaching netting to the wall entirely obviates the necessity of nailing, and the danger of displacing even a single brick. The battens, as seen against the walls, may to some persons appear objectionable; but after a time the eye becomes accustomed to them, especially when it is remembered there is a good reason for their being there. In all solid-built walls there is no necessity for battens being used.

Since the galvanised wire netting has been put up I have visited several large old gardens, where the walls show that many thousands of nails have been driven into them in the course of years. Would not such walls stand as long again if they were fresh pointed, galvanised nails driven in, and galvanised wire netting fastened to them with wire likewise galvanised? In this way the netting is scarcely perceptible at 20 or 30 yards distance.

The size of the mesh of the netting may depend on taste

and the kind of trees; Peach and Nectarine trees will, of course, require a smaller mesh than Pear and Plum trees; but there is no necessity to use a less mesh, even for Peach trees, than 2½ or 3 inches. Had I my choice I would certainly use galvanised wire netting rather than deface and otherwise injure good walls, and when iron spikes or strong nails are made use of as fastenings to the walls, there cannot be any objection to its use as regards appearance. I shall be glad to learn how others may have used it.—G. DAWSON.

I HAVE had nine years' experience with a galvanised wire trellis, and I must say during the whole of that time I have never found the slightest objection to it. On the contrary, there are these advantages: training can be done quite as quickly, if not more so, than by nailing; there is a more free circulation of air about the wood, consequently it becomes more firm and ripe; and there is not that disappointment which I have experienced on going to gather a dish of fruit, to all appearance very beautiful, and finding concealed behind nearly all those which touch the wall, half a dozen or so of woodlice, which have completely spoiled the fruit for the table. This is invariably the case on our other wall, where the trees are nailed.

I quite agree with "ACESTIS," that the fruit does ripen much more regularly on the trellis than where the trees are nailed to the wall.

Again, there is no nailing and unnailing, which make the wall full of holes, a harbour for insects, and ultimately the wall must be repointed, no small inconvenience when it is covered with trees.

Respecting the complaint which "Rrctic" makes about the shoots dying, that I have never seen, unless they have been tied too tightly, in which case they sometimes die. Any metal pressing tightly against the wood will injure it, causing gum or canker.

We have also a common iron trellis painted black, which answers very well, but the galvanised wire is the best; it needs no painting.—A. B. C.

[The experience at the Chiswick Garden is in favour of wire trellises, as was stated by the Rev. Mr. Berkeley at the last meeting of the Royal Horticultural Society, see page 186.]

CATERPILLARS ON BEDDING PLANTS.

ALLOW me to inform your correspondent, Mr. F. Fowler, that the larva of the Cabbage Moth (*Mamestra Brassicae*), always feeds up, forms an earthen cocoon, and turns to a pupa in the autumn. It never hibernates. It is possible that his larva may have been those of *Mania typica*, which does pass the winter in its larva state, and was rather troublesome in my greenhouse during the early part of this winter; but it is far more probable that the caterpillars he found so destructive were those of *Phlogophora meticulosa*, the Angle Shades Moth. This larva is almost as often dark reddish brown as bright green, and to an uninitiated entomologist, the two varieties would seem to be different species.—H. HARRIS CREWE, Rectory, Drayton-Brauchamp, Tring.

NEW BOOKS.

Handy Book of the Flower Garden. By DAVID THOMSON, Archerfield Gardens. Blackwood & Sons, Edinburgh and London.

THERE are some men who never write upon any subject unless they perceive that relative information is needed, and that they possess such information. Mr. Thomson is one of those men, and the consequence is, that the book before us is thoroughly good. In separate chapters, plants for spring, summer, and autumn decoration are enumerated, and their culture detailed; ornamental-foliaged plants, herbaceous plants, Roses, Annuals, &c., receive a similar consideration, and the whole concludes with chapters on the arrangement of colours, beds, and groups, with seven plans. It is a practical volume, which we recommend to our readers without any reservation.

The Trees of Old England: Sketches of their Aspects, Associations, and Uses. By LEO H. GRIMDON, Lecturer on Botany at the Royal School of Medicine, Manchester, &c. London: F. Pitman.

THIS is one of those books which every one peruses with pleasure. It has for its themes the good, the true, the beauti-

ful, and the useful, as illustrated by the forest trees of our native land. "It has not the slightest pretensions to a scientific character, seeking simply to set forth in a plain and easy manner, some few of the beautiful and refreshing truths connected with the foresters of Old England." An extract which we take at random, will give the best idea of the volume's contents.

"On the left bank of the river, about a mile above Two Bridges, the hillside is heaped with blocks of granite, in the spaces between which are nearly five hundred trees of the Wavy-leaved Oak, but singularly distorted. They are gnarled, knotted, and twisted, seldom more than 10 to 11 feet in height, and with a circumference not exceeding 5 feet, and generally much less. The bark is ragged and interrupted, and extends for the distance of about half a mile. Such a group of trees would not be very remarkable in itself: what renders the scene so extraordinary is that the branches, except at the extremities, and this not always, are completely matted over with a Moss, called by botanists *Anomodon rotundifolium*. In most cases the green covering is from 10 to 12 inches in thickness, though the branch that supports it is not of greater diameter than a child's wrist. The weight is so considerable as to bend the branches downwards, just as we may see the branches of Lilacs and other sapling trees weighed down at Christmas by the gentle deposit on them of abundant snow; and all over the surface of this beautiful coating of vegetable velvet may be discovered, in their season, the lovely little seed capsules, by the produce of which the plant is multiplied. The name given to this singular spot, which seems as if it had been touched by the wand of some botanical enchanter, is Wistman's Wood. It is easy of access, and should be visited by every one who may happen to pass through that part of Devonshire.

"Every old wood and forest shows us Oaks bearing Ferns. The latter are chiefly of the kind called Polypody, or the 'Many-footed,' on account of the numerous lateral leaflets giving the idea of feet, as in a centipede. On those grand old rugged bosses which the Oak is so apt to form, some 10 or 12 feet above our heads, there may often be seen a tuft of this elegant plant, perched completely out of reach, and decked with those gay spangles of bright gold which render the Fern in question so easy of recognition, and attract the eye of the most inquiring. All lovers of nature have been attracted in the first instance to the specialities, by some particular plant or flower, which, holding up its finger, as it were, and beckoning, has allured them into one of those sweet side chapels of the great cathedral, which, when a man has once entered, he never desires to leave. There was a famous fable in olden time of a country in which grew Lotus trees. When travellers entered that country, and tasted of the fruit, they were overpowered with an indefinable and delicious longing to remain there always, not necessarily to be always eating Lotus, but to enjoy the heavenly climate and atmosphere that produced it. That country, with its Lotus trees, has not been blotted out. The fable, like every other true one, is for all time. Living nature, everywhere round about us, is the country of the Lotus, and the fruit is the serene and innocent delight, with innumerable sweet teachings for our intelligence, that comes of our looking at it reverently and lovingly. The beckoning thus given is always remembered with pleasure. Fries, the great German writer upon Fungi, tells us how he was attracted to the study of that class of plants, by the lustre of the crimson Dryads' cup, by botanists called *Peziza coccinea*, which in the earliest days of spring appears on dead branches in damp woods and groves, and resembles an immense acorn chamber of the loveliest coral red."

The Orchid-grower's Manual, Containing Brief Descriptions of Upwards of Seven Hundred Species and Varieties of Orchidaceous Plants, &c. By B. S. WILLIAMS, F.R.H.S., &c.

That this is the third edition, is a sufficient evidence of the acknowledged merit of the work. It is only to be purchased of the author at his Victoria Nursery, Holloway, London.

British Social Wasps: an Introduction to their Anatomy, Physiology, and Architecture, and General Natural History, with Illustrations of the different Species and their Nests. By E. L. ORMEROD, M.D., &c. London: Longmans, Green, and Co.

MANY years ago—in the old coaching times—we were travelling with three ladies, strangers to us, when a scream, and the pointing finger of one of them directed our attention to a live snake issuing from the bonnet of her who sat as our *vis-à-vis*. Singularly enough her name was "Eve," and she calmed us by the assurance, "I always have a pet snake." We were reminded of this by the first sentence of the volume before us—"Wasps have been my holiday companions for many years," and so attached has the author become to his "companions," that he says, "bee-keeping and wasp-keeping are about on a par" so far as profit is concerned! What say you to that, ye thousands of British apianians? But our heroic author goes further and groups wasps among the useful insects. They consume, he says:—

"Rotten wood and garbage of all kinds, and besides these, all the insects that they can master. It will be admitted that they devote

themselves to this part of their duties with great assiduity, making prizes of all flies, spiders, and caterpillars; bees, and even other wasps, not being excepted. It would be very difficult to prove absolutely that wasps have a sensible influence in diminishing the number of flies and of other insects. But it is the conviction of some of those who have paid attention to the subject that this is really the case. Among others, Mr. A. Bryon, F.R.S.E., of Edinburgh, the friend and biographer of the late Sir Thomas Brisbane, has assured me that the practical result of destroying all the wasps on Sir T. Brisbane's estate was, that in two years' time the place was infested, like Egypt, with a plague of flies. At every wasp's nest you might have gathered a handful of the wings of insects; and the flies thrived apace when the wasps were killed."

Let us rejoice Dr. Ormerod's heart by adding that we have often watched wasps preying upon the daddy-longlegs that were sunning themselves upon a wall. The wasp darts at his victim, nips off and absconds with its abdomen, and leaves the winged thorax to scramble away, which it does, apparently as if it had sustained no loss!

Moderate enthusiasm aids to the attainment of excellence, and in the case of Dr. Ormerod has enabled him to produce an excellent book on what most readers will consider an uninviting subject. The volume is very amusing as well as instructive, and we have given it the best of testimonies by reading it.

ORNAMENTAL AND FLOWERING SHRUBS.

(Continued from page 187.)

LAVINIA MOBILIS (Sweet Bay).—Leaves smooth, lanceolate, dark green, sweet-scented; flowers yellowish, in May, followed by purple berries. Requires a sheltered situation. The variety *crispa* has waved leaves, subcylindric narrow leaves, and regains very handsome foliage. Height 12 to 25 feet. Seeds sown in heat, or cuttings in a frame.

LAVANDULA SPICA (Lavender).—Well known, and deserving of a place in every garden on account of the fragrance of its foliage and flowers. 3 feet. Cuttings or slips in spring.

LIGUSTRUM VULGARE SEMPERVIRENS.—Well known, very suitable for plantations shaded by large trees, and good for a screen or hedge. 6 to 8 feet. It is propagated by cuttings in autumn, in the same way as Camellias. There is a yellow-berried variety.

LIGUSTRUM JAPONICUM.—Leaves large, shining; flowers numerous, white, followed by dark purple berries. 6 feet. Seeds and layers.

LIGUSTRUM OVALIFOLIUM, a fine broad-leaved sort. 6 to 10 feet. Layers.

PHILLYREA ANGUSTIFOLIA.—Leaves shining, dark green, very desirable for shrubberies. 10 feet. Layers and cuttings. *P. latifolia* and media are desirable species.

RHAMNUS ALATERNUS LAMPOLUS.—Leaves shining. Of rapid growth and ornamental for shrubberies. Angustifolius with narrow leaves, and the white-variegated variety, are desirable. Cuttings and layers. 10 feet.

RAPHIOLEpis OVATA.—Leaves ovate, shining, dark green, broad; flowers white, in April and May, succeeded by purple berries. It forms a handsome bush. 10 feet. Layers.

ROSMARINUS OFFICINALIS (Rose-mary).—Leaves linear, dark green; foliage scented. Cuttings and layers. 4 feet. Needs a sheltered situation.

RYSCUS RACEMOSUS.—Leaves green; shoots green. Very handsome, and desirable for shady situations. This is the Alexandrian Laurel. Height 4 feet.

RYSCUS ACULEATUS.—Leaves dark green; flowers small, white, on the leaves, succeeded by large red berries. Does well under trees, where it is very fine. 2 to 3 feet. Division.

SEMDIA JAPONICA.—Leaves shining, dark green. Does well in shade, and is very fine in winter on account of its branches of red berries. Cuttings and layers. It will grow where few other shrubs will live, and its foliage contrasts well with the red berries.

SPARTIUM JUNCUM (Spanish Broom).—Leaves lanceolate; shoots dark green; flowers yellow, sweet, in July. Very desirable. 6 to 8 feet. Seeds and cuttings. There is a variety with double flowers.

SPARTIUM MULTIFLORUM (White Portugal Broom).—Shoots deep green; flowers white. Seeds.

FLEX EUROPEUS (Furze).—The double Furze or Gorse is very handsome in early summer. 3 to 6 feet. Should have a sheltered situation. Cuttings. Dry soil.

VIBURNUM TINUS (Laurustinus).—A well-known favourite. Foliage dense and compact; flowers white, tinged with red, produced during mild weather in winter and in spring. It should have a sheltered situation, and will thrive in partial shade, but not in intense gloom. There are several varieties, strictum and latifolium being most hardy. It should be extensively planted; it bears cutting well, and may be pruned after flowering in spring to any shape or size required. Layers and cuttings in autumn or spring, in a warm border or under a hand-glass.

VINCA MAJOR.—Leaves ovate, deep green; flowers blue, in May and successively. Does well under trees. 2 feet. Division, cuttings, and layers. Of trailing habit.

VINCA MAJOR ELEGANTISSIMA.—Gold-variegated leaves; very fine. Cannot be too extensively planted in all situations where a close growth is required, and succeeds under trees. Cuttings.

VINCA MINOR.—Flowers blue. There is a variety with white and another with reddish flowers. Trailing. Does as well as the preceding in shade.

YUCCA GLORIOSA.—Leaves long, deep green; flowers in panicles, white, bell-shaped, in July and later. 5 feet. Suckers.

YUCCA FILAMENTOSA.—Leaves with white threads at the margins; flowers very numerous, on a long flower stem, white, in September. Should have a light deep soil.

YUCCA GLAUDESCENS.—Leaves often 2 feet in length, glaucous, lanceolate, numerous; in autumn or late in summer. Suckers.

DECIDUOUS SHRUBS.

AMELANCHIER BOTRYAPUM (Snowy Mespilus).—Flowers white, numerous, and highly ornamental, in April and May. Height 12 to 15 feet. Seeds and grafting.

AMELANCHIER VULGARIS.—Flowers white, very numerous, highly ornamental. April. Seeds and grafting. 10 to 15 feet.

AMYGDALUS NANA (Dwarf Almond).—Flowers rose, numerous, very ornamental. March and April. 6 feet. Requires a warm situation. Budding on the Plum. The double variety is very ornamental; it has rose-coloured flowers. There is also a double-flowering variety with white flowers.

AMYGDALUS ORIENTALIS.—Flowers rose; leaves silvery. Requires a sheltered situation and light soil. March and April. 10 feet.

AMYGDALUS PERSICA FLORE-PLENO (Double-flowering Peach).—Flowers rose, very numerous. Highly ornamental whether trained as a pyramid or standard; it should have a warm situation and dry soil. 10 feet. There are double-flowering varieties with carnation, white, crimson, and rose-coloured flowers, all admirable for forcing and early flowering. They are propagated by budding on the Plum or Almond. They flower at the same time as Peach trees, in March and April.

ANORPHE FRUTICOSA.—Flowers purple; in July and August. A desirable shrub with pinnated leaves. 10 feet. Layers and cuttings.

ARALIA SPINOSA.—Flowers whitish, in panicles; leaves tri-pinnate, large, and very handsome. It requires a light open soil, but likes moisture. Flowers in August or September. It should have protection in winter as the stems are liable to injury by severe frosts, and a band of straw ought to be wrapped round the stem from the ground upwards. 6 to 10 feet. Seeds sown in heat, suckers, and cuttings of the shoots and roots in sandy soil and slight bottom heat.

BERBERIS VULGARIS.—Flowers yellow, succeeded by violet-coloured berries in autumn. Does well in the shade, and forms a close bush, being ornamental in foliage. The fruit make a very good preserve. Besides this (the common Barberry), there are varieties with white and stoneless fruit. 6 to 10 feet. Seeds, layers, and suckers.

CALYCANTHUS FLORIDUS (American Allspice).—Flowers brown, very highly scented. It flowers in June and July. 6 feet. Layers and suckers.

CALYCANTHUS MACROPHYLLUS.—Flowers large, reddish brown, very sweet, and admirably suited for a north wall or aspect, where it flowers beautifully for the greater part of the summer. Layers and cuttings.

CALOPHACA VOLGARICA.—Flowers yellow, produced in profusion in May or June. 3 to 4 feet. Seeds.

CARAGANA FRUTESCENS.—Flowers yellow, in May. If grafted standard high on *C. arborescens* it forms a pendulous head. 8 to 10 feet. Seeds.

CARAGANA PYGMÆA.—Flowers yellow, small. A low-growing spreading shrub, which if grafted standard high on *C. arborescens* forms a compact head, and is very ornamental in flower gardens. 3 feet.

CARAGANA CHAMLAGU.—Flowers yellow, large. May and June. Plant spreading and effective when grafted standard high on *C. arborescens*. 4 feet. Seeds.

CHIMONANTHUS FRAGRANS.—Flowers pale yellow, small, remarkably fragrant, and numerous, produced from December to February. It should be planted against a wall with a southern aspect, and have protection from frost, except in warm situations. Luteous with flowers of a deeper yellow, and grandiflorous with larger flowers, are not so fragrant. 6 to 8 feet. Layers.

CHIONANTHUS VIRGINICA.—Flowers white, in long racemes, numerous, contrasting well with the bold lanceolate leaves. Requires a well-drained, yet moist loamy soil. 10 to 12 feet. Seeds in gentle heat, and layers.

COLUTEA ALBORESCENS.—Flowers yellow, numerous produced throughout the summer. Desirable on account of its rapid growth. 10 feet. Seeds; also cuttings of the roots.

CORNUS SANGUINEA (Dogwood).—Flowers white, succeeded by a profusion of purple berries. The shoots are red, and the variety with variegated leaves is very ornamental. Succeeds admirably in the shade, and in strong moist soil. 12 feet. Seeds and layers.

CORNUS ALBA.—Flowers white, succeeded by white berries. Shoots bright red, very handsome. 8 to 10 feet. Layers.

CORYLUS PURPUREA.—Ornamental on account of its deep purple leaves.

CORYLUS AVELLANA LACINIATA.—Noticeable on account of its cut leaves. Suckers and layers. 10 feet.

CYDONIA JAPONICA.—Flowers red or scarlet, in March, April, and May. A beautiful shrub, very suitable for a wall. 1 to 6 feet. Layers,

suckers, and cuttings of the roots. The variety with white flowers is not nearly so handsome, but that called *principes* I think very fine. *Rosea* is desirable on account of its paler flowers.

CYTISUS PURPUREUS.—Flowers purple, very ornamental, and numerous produced from May to August. Of procumbent habit. *C. elongatus* and *supinus*, both with yellow flowers, and *C. purpureus* already named, form very handsome pendulous heads when grafted on the *Laburnum*. Seeds and layers.—G. ARBEEY.

(To be continued.)

NOTES AND GLEANINGS.

THE subjects which the Fruit Committee of the Royal Horticultural Society intend to investigate this season at Chiswick are Peas, Kidney Beans, Beets, Onions, Leeks, and Broccoliis. Seedsmen who possess novelties of any or all of these kinds of vegetables are invited to send seeds of them as speedily as possible. The Floral Committee intend directing their attention to the varieties of Everlastings, annual and perennial, new Annuals, Fuchsias, Violets, Pelargoniums, and Heliotropiums. The Chiswick Board have decided on making a collection of all the species and varieties of Liliun, and to secure for the garden as complete an illustration of this beautiful genus as it is possible to obtain, and the Society will be obliged to all who will aid in this desirable object. All packages should be addressed to "The Superintendent, Royal Horticultural Society's Garden, Chiswick, London, W."

A FEW amateur and professional gardeners, desirous to forward the cause of horticultural science, have resolved to hold a conversazione on an extended scale at Darlington, combining the reading of short papers, should time permit, and a microscopic exhibition. Joseph Pease, Esq., Southend, Darlington, has given his patronage, and also most liberally provides two well-known lecturers—viz., Messrs. Wheeler, of London, and Censable, of Tynemouth, to conduct and explain that part of the proceedings belonging to the microscope and lantern. The Committee will be obliged by specimen Apples of the variety considered by the sender most suitable for spring use in his county; also, by small hand bouquets, showing more particularly the flowers most valued by the sender at this season of the year. The proceedings begin on the 24th of the present month, at 5 p.m. Particulars may be obtained from Mr. John Richardson, Hon. Sec., Southend Gardens, Darlington, Durham.

It is our painful duty to announce the death of Mr. CHARLES WILLIAM CROCKER, which took place at Torquay, after a long illness, on the 19th of February, in the thirty-fifth year of his age. The deceased had acquired some distinction in his native city (Chichester), for his various acquirements; and among other pursuits he had attained a reputation as a literary correspondent to various periodicals and newspapers. For some years past he had contributed to the local newspapers, THE COTTAGE GARDENER, &c. He took great interest in the Chichester Gardeners' Improvement Society, of which he was for some years the President, and frequently lectured before its members on botanical and horticultural subjects. He was for many years a member of the Committees of the Horticultural Society, of the Literary Society and Mechanics' Institute, and of the Working Men's Club of the city, and worked zealously for each. He was of late years one of the officials of the cathedral, and his acquirements rendered him a desirable eicerone to its numerous visitors, and with much tact he used to direct their attention to the beauties of the building and its interesting monuments. He published in 1866 a very useful little work, entitled, "The Visitor's Handbook to Chichester: a brief account of the history and antiquities of the city, a complete description of the cathedral church, with a notice of remarkable places in the vicinity."

The deceased was constantly engaged in the conscientious discharge of whatsoever his hand found to do. He was the son of Charles Crocker, the poet. He was formerly a pupil at Oliver Whitby's school, where he availed himself of the opportunity of laying a solid foundation of knowledge, which helped him much in his studies in after-life. When his time came to leave this establishment, he engaged himself in the service of the late Mr. Silverlock as gardener. During his hours of leisure Mr. Crocker was a constant evening visitor to the Chichester Museum, and studied most assiduously under the guidance of Mr. Hills, the excellent curator, and he amassed a large amount of valuable knowledge in the sciences of mineralogy, geology, &c. From Mr. Silverlock's he went to Leigh Park, and was under Mr. Scott, who then superintended its beautiful gardens

and pleasure grounds. He subsequently held a responsible post at Kew Gardens, and after a time proceeded thence to the summer residence of the Crown Princess of Prussia (Princess Royal of England), near Berlin, a graphic description of which he wrote for the columns of the *Brighton Herald*. On his return to England he again resumed his post at Kew, but, on finding the arduous duties attached to his employment were undermining his health, he returned to his native city, and employed himself usefully and honourably up to within a period of three months before his decease.

WORK FOR THE WEEK.

KITCHEN GARDEN.

As soon as the soil is dry all crops in rows should have the ground well stirred between them, and this should be done three or four times before the end of April. If you are near a farmyard or common sewer, you need not wait for manure to apply between the rows of Spinach, Cabbages, and similar crops. Now is the best time to begin to apply liquid manure to standing crops. A peck or two of soot will make a good liquid manure if no better is at hand. *Borecole*, or *Kale*, to secure heavy crops of this hardy winter vegetable, a deep soil is essential, and the ground should be trenched 2 feet deep, and be liberally manured. For the main crops sow now, covering the seeds thinly and evenly. *Cauliflowers*, sow the Asiatic and Stadtholder now or early in April on an open border. The soil for this vegetable can neither be too rich nor too highly cultivated. *Capsicums* and *Chilies*, sow in well-drained pots filled with light sandy soil, and placed in a Cucumber frame, or wherever a temperature of about 65° is maintained. Cover the seeds to the depth of about half an inch, and keep the surface constantly moist until the plants appear. *Love Apple*, or *Tomato*, sow seed and treat as recommended for Capsicums. When the plants are about 2 inches high place them in 5-inch pots, putting two plants in each, and replace them in heat; the plants to be well watered and kept near the glass, so as to promote strong sturdy growth. *Lettuce*, for successional crops sow now in beds of well-pulverised soil, and at intervals of about a fortnight until the end of July. Make the surface of the beds firm, sow thinly, and cover the seeds lightly with fine soil. *Potatoes*, it has been proved that early planting is the best preventive of the attacks of disease, for as the crop sooner arrives at maturity it frequently escapes altogether, or suffers comparatively little. Plant any of the good sorts as soon as the ground is in good working condition. The sets of the late kinds should be planted 5 or 6 inches deep, leaving the soil over them as open and loose as possible. They will require at least 2 feet from row to row. I can recommend Dancer's Red Regent as very productive and comparatively free from disease.

FRUIT GARDEN.

It would be a good plan to take one-third of the trees annually, and paint them over their trunks and main branches with thick lime, with a little soot dusted in it to take off the white glare of the lime. If any of the standards showed signs of moss or insects under this triennial dressing, they should be painted over more frequently, while all the stone fruit trees on the walls should about this time be gone over every year. Have coverings ready for the Peach, but do not use them till there is an actual necessity for it.

FLOWER GARDEN.

If it is intended to make any addition of new shrubs or trees in this department, they should be planted immediately. *Aracaria imbricata* is one of the noblest plants we have, and many of the Cedars, Pinuses, and Cypresses, to say nothing of *Magnolias*, are very beautiful. Pinuses suffer more from the destruction of the early spring growth than from any other cause; therefore endeavour to check them by admitting a current of cold air from the north side, and by keeping the plants shaded on sunny days. *Polyanthuses* are now throwing out fibres round the neck of the plant and growing fast. If increase is more an object than bloom, they may be parted to advantage now. Tulips ought to be protected from heavy soaking rains, as well as sharp frosty winds, which we may yet expect. The best way to sow annuals is first to loosen the earth where it is intended to place them, avoiding raking the borders at present unless the ground is very light, then make a slight drill by pressing the rim of a 32-sized pot upon it, sow the seeds very thinly, and cover with loam and leaf mould finely sifted, and in about equal proportions.

GREENHOUSE AND CONSERVATORY.

The Azaleas have a double demand on their food—to maintain their flowers, and to make their young wood; they must, therefore, be well supplied with moisture at the roots. Pelargoniums at this season remain so long in flower that they are sure to have the green fly on them. Remove them and every other infested plant to be smoked elsewhere, if the conservatory is attached to the living-rooms. Climbers will now begin to spread over the house, and will require particular care in training them regularly at first. *Stephanotis floribunda* will survive a mild winter in a night temperature as low as 45°. Little syringing should be done here on account of the bloom; water must, therefore, be poured on the paths and any spare places to keep the atmosphere moist and cool. See that insects are kept down, and that plants have sufficient room. Specimen plants are easily injured at this time if they are crowded together. All the plants brought in for the sake of their flowers only should be removed as soon as they are out of bloom. Some of the more hardy and common plants in the greenhouse might now be removed to some sheltered place, in order to give more room to the finer kinds. Young plants in small pots might now be potted on the one-shift system; but for this it is essential that their roots be not much matted, and that they be in a growing state. The only disadvantage in this system is, that after a few years the soil will subside too much in the pot, and many delicate plants will not bear the pots to be filled up again. The best remedy against this is to place an inverted pot over the drainage, as is often done with Orchids, and to have it so adjusted that when you place the small ball at the bottom of it, the top of the ball will be level with the top of the large pot. A small Heath thus treated may safely be trusted in the largest pot. The collar of the plant always remains at the level at which it was placed.

STOVE.

Keep up a moist heat of 75° or 80°, and let the house be rather close, in order to encourage newly-potted plants. Proceed with the potting of the different tribes as before recommended. Watch carefully over seedlings, and put in cuttings as early as possible of those plants you wish to increase. Now is the best time to strike cuttings.

FORCING PIT.

Keep every part of this pit full of plants and cuttings. All the species of Jasmine force well. If kept under-potted and their young wood constantly stopped in the growing season, they form loose bushes and lose their climbing habit; they are then more manageable for forcing. All American plants require large quantities of water when forced. Sow a few seeds of Balsams, Cockscombs, Browallias, Thunbergias, &c.

PITS AND FRAMES.

Many of the hardier plants here may now be removed to temporary shelter to make room for others from the greenhouse, and for newly-potted plants for the flower garden. Florists' flowers require more room also—in short, every tribe now should be attended to, according to the wants and wishes of the owner. Among the first work to be attended to, especially when a large stock is required for flower-garden decoration, is the propagation of Chrysanthemums. Pot Tuberose in 48-sized pots in turfy soil, and place them in a gentle warmth until they begin to grow. They are useful for setting among plants near the windows, or for the decoration of the hall or drawing-room.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Parsnips.—Took the opportunity of a dry day and the soil being in a favourable condition to sow the main crop of this useful vegetable, almost the only one we care about sowing in our stiff soil early in March. No tuberous-rooted crop requires more time to come to thorough perfection, and its richness of flavour is greatly owing to the time it has had to perfect its peculiar properties. Young Carrots are in most people's estimation very sweet and desirable—so much so, that at one time we continued sowing monthly from the last fortnight of March to the end of June, besides several sowings in heat from December to the end of February; but we never met with a lover of vegetables that cared much for young Parsnips, and therefore the thinnings are of little importance in the kitchen. We prefer the old Hollow-crowned, and though we have tried

a number of sorts advertised with very high characters, we never found them on the whole to beat it.

We have sown in rows 18 inches apart this season in the usual way, but in land at all heavy (and the plan might be thought worthy of adoption by amateurs), we have marked out the rows, and then with a strong dibble made deep holes 6 inches apart, filled these with fresh very sandy loam, and in each hole deposited three or four seeds, the plants from which will be finally thinned out to the best one. By this plan we have obtained straight roots of extraordinary size. We may also mention that this season we have sown on a piece of ground from which Asparagus had been taken for forcing; and though the best and richest soil from repeated surface-dressings of the Asparagus, owing to trenching, would be at the bottom, still the surface soil would be richer than we like for these roots and Carrots. When the rotation will permit of it we prefer as poor a piece of ground as we have, manured on the surface; the manure trenched down to the bottom, the ground ridged, and the ridges several times turned, but not so deeply as to reach the manure, so that when the seed is sown there shall be an encumbrance for the seedlings to send their roots straight down—just as the roots of an Ash or a Lime will travel a long way, as if by a sort of instinct, to reach the moisture of a well.

Carrots.—Sowed a few rows of the Early Horn, as, if they succeed, they will be useful, and if they partially fail, the loss will be little. We are more particular in having the ground well prepared for this crop than in sowing early. In general we find the end of March and the beginning of April the most suitable times. There is then less danger of checks, and the seedlings become strong and healthy at once. It is true the seeds will take no harm from lying in the ground, it is the young seedlings that suffer from sudden frosts and extreme changes in the weather.

Onions.—We sowed a lot under protection for salads, and, perhaps, planting out a few; but the main out-door crop we will not sow for a week or two, unless the weather should be very favourable, and at present we expect rain, if not snow. We will use our Celery ground, on which the Celery was grown in beds, as we could not afford space for having it in rows. Last season we had not a single head which had run to seed. We trenched and ridged the ground crosswise, which enabled us equally to distribute the manure at the bottom of the Celery beds all over the piece, the beds running north and south. This plan, though effectual in equalising the manure over the piece, was not a good one for airing the ground equally and well, so a dry day was chosen for levelling the ground roughly, and then ridging it up one spit deep in ridges lying north and south, that the sun might act on both sides of the ridge equally. We will most likely turn these ridges roughly again, so as to air and sweeten the ground, and then dig level, and some fine day have the ground trodden, raked fine, and the Onions sown in rows; though in stiff ground it is a good plan to sow in rows in beds, with alleys between them. For amateurs this is also the neatest plan, as the neatly-edged beds are pleasant to the eye; but in general we sow the piece in rows from 9 to 12 inches apart, and, unless the ground is very dry, we scatter a little fine soil over the seeds in the rows, and when finished, draw a light wooden roller over the ground, passing a heavier roller over it as the seedlings begin to peep above the surface.

Cucumbers.—Planted out a lot more in frames and pits. A two-light box served to produce us strong early plants of Cucumbers and Melons, and were the heat to be bestowed on that tribe alone, there is no other method by which good plants can be obtained so economically. The same frame was used for flower and other seeds before the Cucumbers wanted the room.

Potatoes.—Besides planting out, put several sorts, chiefly new kinds, not sprouting, on a bed in the Mushroom house, that they might root and show shoots 2 or 3 inches in length before planting. If these are turned out in a sunny day, and the warm surface soil placed round the roots and stems, they will receive no check, and come considerably earlier than sets planted at once.

Leeks.—When these are wanted early and large, the seed should now be sown thinly in a bed, and receive a little protection from boughs until well up. When the seed is sown thinly the plants are stronger for planting out. It is easy having these healthy vegetables large after this time. The difficulty with us has been to have large specimens in winter.

Sowed successions of small salading, Radishes, Cauliflowers, and a few Cabbages under protection. We are using spring-sown Radishes, as those that stood the winter under protection are now much harder and less crisp.

We will prepare ground for Asparagus, Sea-kale, Artichokes, &c., as soon as possible. Globe and Jerusalem Artichokes cannot be planted too soon. The latter will last for years; but when ground and time can be spared, we always think the tubers sweetest and best when fresh planted every year like Potatoes. If the weather continue cold, beginners may bear in mind that having the ground in good condition is more important than very early sowing.

FRUIT GARDEN.

Much the same as in last and previous weeks; a press of other matter has thrown us behind in this department, but we must finish our out-door pruning as soon as possible, and must take some simple means for protecting Apricots and Peaches. As for the latter, the crop is now becoming so uncertain out of doors, and fine trees run such risks, not only of having the crops destroyed, but also of the trees being so injured by severe frosts and sudden changes, that we trust that most people who have gardens of their own will cover their Peach walls with a cheap glass construction, which will soon pay itself by the saving effected in the labour and expense of protection, and, as a general rule, make sure of a crop with but little trouble. These cheap fixed glass-roofed houses, as adopted by Mr. Rivers, Messrs. Lane, and many others, place fine fruit within the reach of those having but a small garden, and with common care success is almost certain. Most likely we will use laurel or beech twigs for protection. For a constant covering nothing is better than woollen, or even the thin Nottingham netting. For a moveable protection nothing is better than stout calico, and the great object is to use it for retarding as well as for protecting, by keeping it on during sunny days before the bloom opens, and taking it off on cold days and nights. This also permits of more reciprocal root action. After the bloom opens the practice must be reversed, and the bloom have all the fine weather, and be protected from the cold.

ORNAMENTAL DEPARTMENT.

Nearly finished planting for present cover and future timber, and it is well to have all such work done by March.

Warm Sheds.—These, we trust, will soon be an essential requisite in every garden of note. We have no such regularly warmed place, but we have several furnaces covered over with sheds, and in winter and spring these are tolerably comfortable, but even then not quite so suitable as a working shop heated by hot water, which can easily be done where a boiler is at work in the vicinity. Our nurserymen are finding that such comfort is conducive to work being done economically. When we called on Mr. John Fells, at Hitchen, lately, whilst noticing the improvements in his houses, &c., we were particularly pleased to see a large workshop heated by hot water, where the men might work comfortably in stormy, rainy weather in winter. Mr. Fells stated that the hot-water pipes had been a most profitable investment, for the men with comfort to themselves did much more work, and did it much better.

Cleaned and swept most of the pleasure grounds preparatory to a good rolling of the lawn. We will cut the sides of walks as soon as possible, trim and regulate herbaceous plants, and prune Roses as soon as we can. We will also turn and re-turn flower beds. Potted Fuchsias, Pelargoniums, Ferns, and other plants; fertilised blooms of Chinese Primulas, as the 2s. 6d. and 3s. 6d. packets of our florists yearly become less and less. Forced Hyacinths and other bulbs are getting towards their termination; shrubs and Roses will take their place. Pricked-off in little boxes Lobelias, Petunias, &c. Sowed numbers of flower seeds, as Perilla, Amaranthus, and Lobelias, in a hotbed, and, in order to shade, whitened the glass inside, as that will obviate the necessity of much watering until the seedlings are up, as the pots were prepared as described last week. Put in lots of Verbena, Centaurea, and other cuttings. Placed some Verbenas on which some green fly appeared in a box by themselves, and smoked them; and to save future trouble drew the cuttings as made through weak tobacco water, and would have little difficulty now but for want of room in which to place the multitudes of little plants wanting attention.—R. F.

TRADE CATALOGUES RECEIVED.

Carter & Co., High Holborn, London, W.C. — *Carter's Farmers' Calendar* for 1868.

William Paul, Waltham Cross, London, N.—*Spring Catalogue of New Roses, Pelargoniums, Hollyhocks, &c.*

Charles Huber & Co., Hyères.—*Catalogue Général pour l'Automne 1867, et le Printemps 1868.*

COVENT GARDEN MARKET.—MARCH 11.

FOREIGN importations are heavy and prices receding. The best English produce maintains last week's quotations, owing to the supply not being so liberal. Pines and hothouse Grapes are scarcely sufficient for the demand. Of the former we have had some good specimens from St. Michael's, weighing from 3 to 6 lbs. each.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	3	0	5	0	Melons each	0	0	0	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges 100	3	0	7	0
Chestnuts bush.	8	0	11	0	Peaches doz.	0	0	0	0
Currants ½ sieve	0	0	0	0	Pears (dessert) doz.	4	0	8	0
Black doz.	0	0	0	0	Pine Apples lb.	6	0	10	0
Figs doz.	0	0	0	0	Plums ½ sieve	0	0	0	0
Filberts lb.	1	0	0	0	Quinces doz.	0	0	0	0
Cobs lb.	1	0	0	0	Raspberries lb.	0	0	0	0
Gooseberries quart	0	0	0	0	Strawberries per oz.	3	0	0	0
Grapes, Hothouse lb.	8	0	12	0	Walnuts bush.	10	0	15	0
Lemons 100	8	0	12	0	do. per 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	3	0	4	0	Leeks bunch	0	3	0	0
Asparagus 100	7	0	20	0	Lettuce per score	1	0	1	6
Beans, Kidney 100	0	0	3	0	Mushrooms pottle	1	0	2	0
Beet, Red doz.	2	0	3	0	Mustard Cress, punnet	0	2	0	0
Broccoli bundle	0	6	1	6	Onions per bushel	3	0	5	0
Brus. Sprouts ½ sieve	2	0	2	6	Parsley per sieve	4	0	5	0
Cabbage doz.	1	0	1	6	Parsnips doz.	0	9	1	0
Capsicums 100	0	0	0	0	Potatoes bushel	4	6	5	6
Carrots bunch	0	6	0	8	do. Kidney doz.	4	0	6	0
Cardiflower doz.	3	0	6	0	Radishes doz. bunches	1	0	1	6
Celery bundle	1	6	2	0	Rhubarb bundle	0	9	1	0
Cucumbers doz.	3	0	4	0	Savoy doz.	1	0	2	0
Endive doz.	1	0	0	0	Sea-kale basket	2	0	3	0
Fennel bunch	0	3	0	0	Shallots lb.	2	8	0	0
Garlic lb.	0	8	0	0	Spinach bushel	2	0	4	0
Herbs bunch	0	3	0	0	Tomatoes per doz.	0	0	0	0
Horserradish bundle	2	6	4	0	Turnips bunch	0	4	0	6

TO CORRESPONDENTS.

BOOKS (*Tan*).—"The Garden Manual" will suit you. You can have it free by post from our office if you enclose twenty postage stamps with your address. (*Alpha*).—The price of the work you name is 31s. 6d.

ARISTOCLES (*Ignoramus*).—Mr. Beaton died before he had obtained any satisfactory results from his experiments with these flowers.

ADDRESS (*H. K.*).—We do not know the address of the gentleman to whom you refer.

GLASS COVERING FOR WALL.—"C. R." wishes "BATH" would state from whom he obtained the covering he mentioned.

IMPROVED MELVILLE'S VARIEGATED BROCCOLI.—At page 167, February 27th, this heading was misprinted "Broccoli."

PELAGONIS HUNG UP IN A ROOM (*H. A.*).—You should now pot the plants hung up by their roots, using dry sandy loam, and by degrees bring it into a moist state. The plants may be placed in a greenhouse window, in any house where there is a gentle heat, or in a hotbed; but if placed in the latter they must be carefully watered until they begin to grow, otherwise they may damp off.

SOVING AUCUBA BERRIES (*Aucuba*).—The berries should not be dried, but sown at once in a compost of two-thirds loam and one-third leaf-mould. They may be placed in a mild hotbed, but will succeed in a greenhouse. When the seedlings appear, and have grown a little, the male plants may be distinguished from the female, but only by those conversant with them. You will have to wait until they are of a size fit for flowering and producing berries are you will be able to distinguish the male from the female plants. The berry-bearing plants are, of course, the female plants. If placed near them, the male will fertilise the female naturally, but to make sure it is well to do so artificially. With good treatment the plants will produce berries the second year, but they vary considerably in this respect. They generally have berries by the third year.

SELECT SUBTROPICAL PLANTS (*St. Dem's*).—We are not sure whether the bed above that is 5 feet by 31 feet, or if that is the size of each of the three steps; if the latter, then *Wigandia caracasana*, *Ricinus borbonensis*, and *Striped Maize* would do for A; *Ricinus Obermanni*, *Ricinus sanguineus*, and *Canna Finckmanni* and *Worcesterii* would do for B. Your plants of *Cakile* *cuneifolia* would do for C, along with *Anacardium mitchellii*, *Anacardium trielori*, *Caribaea benedictus*, and *Perilla nankinensis*, with an edging of *Cineraria maritima* or *Centaurea*. If we mistake let us know, and also if you wish to raise from seed, or obtain plants.

PLANTING VINES (*D. M.*).—Do not turn the Vines out of No. 12 pots if you wish to have a crop from them this season. Top-dress, and thus give nourishment. If your Vines were to be permanent shake the soil away and spread the roots on the border.

VINES WITH ROOTS TOO DEEP (*Boonier*).—We have referred to the answer given respecting your Vines at page 15, and no doubt it was the best under the circumstances, though we do not clearly recollect all these now. In answer to your inquiries of this week, we would not advise you to dig down 8 or 10 feet after the roots of these old Vines, nor to attempt to raise them near the surface. The other plan proposed—viz., to dig down 4 or 5 feet and place fresh compost round the stems in order to encourage roots from the stem, adding compost year by year, will only be a palliative. Presuming that these old Vines do bear a little, we would let their roots alone; and if you can go down 30 inches, or partly to that depth, and make the border that depth by raising it to the wall plate, then we would remove the surface soil as deeply as possible, add fresh compost thinly as advised in page 15, on that place 3 inches of concrete, and from 6 to 9 inches of rubble, and on that make, after securing drainage,

a new border 1 foot wide. To it we would plant young Vines, which will be much better than raising the old Vines; as the young Vines grow out under the old ones, and add 18 inches every year to the width of the border after the second year. This will be the most effectual and the simplest plan.

PLANTING FIG TREES IN A PEACH HOUSE (*T. S.*).—Were we doing what you propose—planting Fig trees on the back wall of a Peach house, we would have a drain and 6 inches of open rubble, then a depth of from 20 to 21 inches of soil, and a wall below the surface to confine the roots to 30 inches in width. We have had them good with a width of from 24 to 27 inches; but if there is room, 30 inches will, perhaps, be better.

CUCUMBERS IN A FLUE-HEATED PIT (*J. B.*).—To make the most of your flue beneath the hotbed of leaves, make a rough chamber over the flue, with openings from that chamber into the atmosphere of the pit. You can regulate your heat then at will with plugs to these openings. It is not safe to have a bed of leaves over and round the flue, and when the leaves are dried they will keep the heat from ascending.

SOILS (*An Old Subscriber*).—The darker soil from adjoining the river is rich alluvial soil, requiring nothing but thorough draining, probably, to render it fully remunerative if cultivated. The other contains abundance of vegetable fibres and rootlets, but is not sufficiently siliceous of them to render it fit for food, nor is the earthy portion sufficiently siliceous to fit it for potting purposes.

ONION CULTURE (*A Gardener Perplexed*).—There are many different ways of securing a good crop of Onions, but the mode described by you of preparing the ground so carefully, sowing, covering, &c., leaves little or nothing to be desired or alluded to, and we need scarcely be strengthened in this conclusion by your statement that such a mode has secured good crops for seven years. We are not surprised that your employer on coming into the garden should say "he never saw Onions put in in such way before," as it is quite possible he had never troubled himself to notice the mode previously adopted; but it does surprise us that because the sowing "was not done properly," you are obliged to leave your place, and more especially when your employer declined to say what was the plan he approved. Of course, in this country a man may leave his master, and a master part with a servant without assigning any reason, though such conduct on either side does little to promote the amenities of life. We can hardly believe that a gentleman would assign such a reason as the sowing of an Onion bed under such circumstances. When you inquired the mode your employer preferred, was there no lack of that courtesy and consideration which every employer has a right to expect, however mistaken he may be in his ideas? We can just fancy there might be something more annoying in this direction than any differences of views as to the sowing of the Onion bed. If not, and your version is a true one, then we think you have been hardly dealt by, and being a married man with a family, we can only hope you will soon be more comfortably settled. We do not see how you could be blamed for following your own mode, if your employer expressed, and would express no opinion on the subject. Gardeners are a little touchy in not having their own way; but an old nurseryman once impressed on a young gardener that the wishes of an employer, when expressed, must be carried out, and ended with saying, "if a master wished a tree to be planted with branches in the ground, and the roots in the air, let it be done; he pays for the work, and should have his money spent in his own way if he injures no one else."

ROYAL ASCOT VINE (*A Monmouthshire Gardener*).—We do not think it is common to send out new Vines started into growth in February, but if you had no heat, you should have made sure of a Vine that was not started into growth. Of course, a nurseryman would send as little wood of a new Vine as he could. Every bud is valuable when a plant is worth two guineas. As your two buds are growing, and you have no frame, pit, or hand-light that you can keep warm, we would place the plant with its pot in your living-room window, and surround it with some squares of glass, or a large hand-glass. There are few gardeners that order a two-guinea Vine but would find some means of keeping it growing slowly, even in a coolinery, if a bell-glass or hand-light could be made available.

STAR PINKS.—"J. H." wishes to know where he could obtain a good assortment of Star Pinks.

ZEBRA RUNNER BEAN.—In answer to "LANSLOWNE, Worcester," if he will apply to Mr. S. Taylor, Gardener, Terrace Villa, Barbourne, Worcester, he obligingly offers to supply him with sufficient to regain his stock.

BRIDGEWATER TILES FOR COPIING.—In answer to "IRISH SUBSCRIBER'S" inquiry as to where the Bridgewater tiles are to be bought, I beg to say that if he writes to either Messrs. Sealy or Messrs. Brown, Bridgewater, Somerset, they will doubtless give him any information he may require. Any other good tile, if large enough, would do as well; the great point is for the roof to overlap the wall 10 or 11 inches. Trusting to memory, I find I made a mistake in the measurement of the overlap in my letter. It should have been 11, instead of 10 inches.—A SOMERSETSHIRE PARSON.

TORRACIO PAPER (*M. J. and S.*).—It is impossible, without analysing it to ascertain if there is any constituent in it likely to be prejudicial to plants when it is burnt. The probability is that the smoke was too abundant, and the plants not in a fit state to endure it.

YELLOW-LEAVED PLANE TREE (*G.*).—We cannot speak decidedly, but think that the tree you saw is the *Corsorphine* Plane, *Acer pseudo-platanus flavo-variegata*.

PROMISE OF CUCUMBER HOUSE (*A Constant Reader*).—It is very difficult to answer your questions, as so much depends on the management and the market; but we know of one such house in which 1500 fruits were produced in a season, of a value in the market of a large town of £75 10s., but the following year the produce did not realise £50.

ARTIFICIAL MANURE FOR FLOWER BEDS (*A Subscriber*).—For the purpose you name "Standen's Gardener's Friend" is a good manure. A sprinkling may be given over the surface of the soil at planting-out time, and should be lightly forked-in. Guano is also a good manure for flower beds. It may be applied at the time of planting out, enough being sprinkled over the surface to make it yellow, and should then be pointed-in with a fork; or it may be applied in the liquid form, 2 oz. being dissolved in a gallon of water, and a good soaking given the beds during dry weather.

TRITILETA UNIFLORA CULTURE (*Mrs. A.*).—The plant should be continued in the greenhouse, be kept in a light and airy situation, and be

well supplied with water until the growth is complete. When the leaves turn yellow, it may be planted out in the open border. It is quite hardy.

GUERNSEY AND BELLADONNA LILIES NOT FLOWERING (G. C.).—We are unable to account for the Guernsey and Belladonna Lilies not flowering, unless it be owing to their having been kept in ainery, which would not, from the shade, be a place calculated to secure the full maturation of the growth, upon which their flowering mainly depends. We would advise your keeping the plants constantly upon a light shelf in the greenhouse, placing the pots in pans full of wet sand. The sand should not at any time be allowed to become dry, not even in summer, when the plants are dormant, but at that time the latter need not be watered at the surface. Do not repot them, but keep them in the same pots until the drainage becomes defective, or they split the pots.

PEACHES FOR FORCING (Idem).—Four good Peaches for forcing are: Grosse Mignonne, Bellegarde, Royal George, and Noblesse.

PLUM TREES BLOSSOMING, BUT NOT FRUITING (N. Chapel).—We should conclude that your trees have been planted in badly-prepared ground in the first instance, and that the roots are now in ground so hard that it does not admit of the rain entering it freely. Your taking out a trench some years ago and filling it with clay rammed hard, would only tend to make the ground impervious to rain. We would advise you to dig round the tree-trenches for holding water, to make holes 2 feet deep with a crowbar, at every foot distance, and then fill the trenches with water, and keep them full for a time. Three or four waterings of this kind will be sufficient. The trenches need not exceed 6 inches in depth. When the water has subsided you may level the ground, and manure round the tree with an inch or two thick of cow dung. This should be done now.

TROPEOLUM JARRATTI NOT FLOWERING (Idem).—We can only conclude that your plant in theinery is not placed near enough the glass, and has not a light and airy situation. Afford it this, and it should flower freely.

ZINC LABELS (G. S.).—We do not know of any better means of preventing zinc labels from corroding or tarnishing than painting them with white lead, giving two thin coats, and allowing the first to dry thoroughly before the next coat is given, and then to give a coat of stiff or thick paint. Before this becomes dry, write upon the labels the name with a joiner's pencil, and the writing will be impressed in the paint on the label, and will be as enduring as the paint. Wooden labels are quite as durable as zinc, but are more conspicuous.

PAPER COVERS FOR FLOWER POTS (I. I. W.).—The paper envelopes for flower pots are sold in the Middle Row, Covent Garden Market.

VARIEGATED JAPANESE HONEYSUCKLE FLOWERING (Idem).—The variegated Japanese Honeysuckle (*Lonicera atropurpurea*) has flowered in England. As far as we are aware the first notice of its having done so appeared in page 471, Vol. X, New Series, where it is described as growing at The Laurels, Tanton, on the south wall of a greenhouse, and as being very sweet. It is quite hardy, and will succeed in the open ground; we having employed it extensively as an edging to beds, and for centres to flower beds, training it in the form of a pyramid. Though it grows freely against a wall with an east or west aspect, we think a wall with a south aspect essential for its flowering.

REMOVING WEEDS FROM ORNAMENTAL WATER (Idem).—Your mode of fixing the scythes is correct. All you want is a rope fastened at each end of the blades, and not between them, as shown in your sketch at n. You will thus require four ropes instead of two, and by pulling at two in the direction you wish the weeds cut, the machine will be prevented from turning over by the ropes being held by persons from behind, and moving as those at the other ropes draw the implement forward. It can then be drawn backwards and forwards until the weeds have been cut, and this may be repeated as often as required. This is not a bad method of keeping down weeds, but ducks, swans, and other waterfowl do so more effectually, and are ornamental as well.

CELOGYNE CRISTATA (An Orchid-Grower).—You may cultivate it either in a pot or on a block; we should prefer the former, and by pursuing the treatment named at page 90 of Vol. iv., to which you allude, we have every hope of your succeeding. You will do well to cut away the bloom buds now appearing, making sure that they are such before doing so. You should place the plant on the block, put a little fibrous peat between the roots and the block, then cover the roots lightly with sphagnum; behind the moss sprinkle a little fibrous peat, and then secure firmly with copper wire. The block for the size of plant you describe may be 1 foot long and 8 or 9 inches in breadth. You may about midsummer, if the plant be in vigorous growth, water with weak liquid manure. The wrinkles on the bulbs are due to exhaustion of some sort; probably the plant has been kept very dry before the growths were mature. It is seldom owing to the flowering.

TRANSPLANTING CHAMEROPS HUMILIS (Try).—We should take out a trench all round the plant 10 feet high with a hole 3 feet in circumference, not going nearer the stem than 3 feet, and go down as deeply as the roots. This done, with forks remove all the soil from the surface, and that parting freely from the roots, plying the forks inwards towards the stem. In this way remove all the loose soil; but when you come to where the roots and soil are very closely matted, do not attempt to remove the latter, but work under the ball from all points, and introduce under it two planks of sufficient strength to support the weight of the tree and ball. These should go completely under the ball, and extend twice the distance taken up by the ball. Two 12-foot planks, 11 inches by 3, will be required, and they should be placed under the ball so that each shall bear an equal proportion of the weight. To maintain them at the proper distance, pieces of timber may be placed across, close to the ball, on opposite sides of the tree, and the ball and tree made secure to them with ropes, having previously covered the roots or ball with mats, and otherwise taken every precaution to prevent the injurious effects of dry air and sun upon the roots. The part of the stem to which the ropes are attached should be protected with mats wrapped round it. You may then place handspikes crosswise to the planks, three on each side of the tree and, tying them to the upper side of the planks, put three men to each handspike, or, in case of necessity, four to six. By these means the tree may be raised and taken where required, or placed on a low truck and drawn by horses. Early next month will be a good time to perform the operation. Your mode of proceeding after planting appears sound, and will, no doubt, prove successful.

SOWING SEEDS OF RICINUS, ZEA JAPONICA, AND OTHER ORNAMENTAL-FOLIAGED PLANTS (York).—You should sow the seeds at once on a hot-bed, and grow the plants in heat. Prick them off when large enough, or pot-off, and shift into larger pots as those first used become filled with roots. When the plants are of a good size harden them well off before planting out, which in your locality should not be done until the beginning or middle of June.

PAINTING HURDLES (H. T.).—Nothing is so disagreeable for coating iron hurdles with as gas tar. We had many hundreds of yards of iron fencing, such as you describe, that had been daubed repeatedly with gas tar, and had become quite offensive. We had them taken up carefully and piled one above the other, putting some bricks under the bottom hurdles to keep them from the ground, and placed all round them a quantity of brushwood, which being set on fire burned the tar off. We then gave two coats of lead-coloured paint, made of white lead, lamp black, and linseed oil, and then, refixing the hurdles, brushed off with two coats of green paint.

LILIU ACRATUM (F. D.).—The bulbs of this, sold at Mr. Stevens's rooms, on the 6th inst., brought from 3*l.* to 5*s.* each, according to quality. For *Gladolus Breuchleyensis* the prices were merely nominal.

NAMES OF PLANTS (J. S.).—*Helleborus viridis*, or Green Hellebore. (R. Kemp).—We cannot name plants from descriptions of them.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending March 10th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed. 4	31.106	29.970	56	49	48	44	S.W.	.02	Cloudy; overcast; cloudy and very boisterous.
Thurs. 5	29.588	29.561	58	36	49	45	W.	.00	Overcast, brisk wind; clear; fine at night.
Fri. .. 6	29.750	29.650	51	27	48	45	N.W.	.00	Clear, clear and very fine; fine.
Sat. .. 7	29.717	29.485	52	36	47	45	N.W.	.22	Clear and fine; overcast; rain, overcast.
Sun. .. 8	29.416	29.093	46	31	47	44	W.	.00	Hazy; overcast; cloudy and very boisterous.
Mon. .. 9	29.581	29.382	50	35	46	44	S.W.	.00	Fine; clear and fine; fine at night.
Tues. .. 10	29.500	29.364	52	27	46	44	S.W.	.00	Clear and fine; overcast; clear at night.
Mean	29.605	29.500	52.14	34.43	47.29	44.43	..	0.24	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

PROFITABLE POULTRY-KEEPING.

Nor only is there a tide in the affairs of men, but we believe there is one in poultry. Like the banner that formed or forms the subject of a contest, it rises, falls, is now to the fore, sinks, and when apparently gone rises higher, and with a better surrounding than ever. The poultry pursuit was of sufficient importance at one time to be called a "mania." This is no mean distinction. A mania takes hold of the public and the public money. That which costs nothing is unworthy of the name, and no notice is taken of it. If a man has a few thousands per year, and some glaring eccentricities, he will

soon find near relatives so anxious about his welfare, that they will get learned men of the law and of physic to ascertain whether the patient should not have his property managed for him. But in every town and village there are men notoriously of unsound mind, who have been playthings for idle fellows and children all their lives. No one cares for them. There is something akin to this in the results of these manias: a man who fails for a hundred thousand has more admirers, and is more looked up to than the plodder who pays in full all his life. No one failed for large sums during the poultry mania, but there were numbers of discontented, and plenty of people who called it "a bubble." It was neither one nor the other. It was not a mania, for at the end of twenty years the pursuit is now, perhaps, on a firmer basis than ever. It is not a bubble, for it has long passed the age of such things. There are not

wanting far-seeing people who say, that when the gold of Australia is exhausted, wool and corn will form more certain foundations of prosperity; and so we do not hesitate to tell all, that if every show in England were closed, and the "Standard of Excellence" were become obsolete, there would be a sound and profitable pursuit in keeping poultry. When a large nugget is found in Australia there is a rush of all the unemployed to the spot. It is the same when a new breed of fowls comes up. It becomes at once the attraction of all the poultry Micawbers who are waiting for something to turn up. The breed is at once invested with almost miraculous virtues, and may rank among the fortunate if it escape improvement at the hands of some of those who view it as a means of making money. There is always a large class of society that cannot bear the beaten track, nor submit to jog on among those who toil patiently, adding little to little, till they have mastered a position. They must be quick, enterprising, and shrewd. They must see advantages hidden from ordinary men, and must, of course, reap a benefit corresponding with their own estimate of their deserts. It was this spirit that caused Cochins to make fifty guineas each, sometimes more, and, it may be added, this spirit brought about the collapse that followed the mania.

There can be no doubt of the great interest now taken in poultry, we believe we may say more than was ever before shown. It had the honour to be placed among the "limited" of 1866; but fortune frowned upon it in such company. Too much was expected of it, and therefore it produced only disappointment. The present generation is evidently wiser. It is not led away by visionary schemes, nor does it believe all that is published in England as being well known abroad. The present movement bids fair to be lasting, and to produce good results. Those who have been in the habit of reading our columns will know we have foreseen this, and have predicted such a time as the present—the revival of the poultry question in its capacity for producing food. There will be no disappointment in this, for none is possible. It is only where undue expectations are raised that such a result happens.

It has been often urged, and by good authorities, that poultry will never become a staple article of food. We do not believe it will ever be sold at per lb. like beef or mutton in the markets; but we also know there is demand for a much larger quantity than the United Kingdom produces. If we should ever have that which is much wanted—a statistical account of the importations into Leadenhall and Newgate markets, many who flippantly talk about the whole question being in a nutshell, and pooh-pooh what they are pleased to call a few Turkeys and Rabbits, will be astonished at the number, weight, and value of the imports. That which was a small trade a few years since—viz., the importation of Ostend Rabbits, now counts in many thousands of pounds monthly; while they are delivered by the ton, and sold to the dealers at per stone like beef or mutton. It may be said these do not belong to poultry; granted. Eggs do; what will be said of the importation of between 4 and 500,000,000 annually? The whole north of France, all Belgium and Holland, parts of Switzerland and Italy, are put under contribution to supply the English poultry market. Those who travel in these parts will hear constant complaints at the change that has taken place. The good Goose or Turkey to be had formerly for 40 or 50 sous, now makes twice as much; while the omelette that used to be made with twenty eggs, now costs more, though it is only composed of twelve. All these come to England. Experienced Englishmen have been sent to France to superintend the killing, picking, and packing of Turkeys after the English method, while the Geese are bought lean and sent to England to fatten. This is no mania, nor is it a speculation. It is an established trade, and has lasted for years. This proves it profitable. This again is an assurance there is demand for all that is sent over. Hence two conclusions: first, that we do not produce enough; next, that there is no doubt of a sufficient demand and a sure market. We have nothing to do here with the high-flown descriptions of many who have really no real knowledge of the subject, and who will almost undertake to prove the possession of a cock and six hens a moderate livelihood. We cannot agree with those who would have people believe that any number of fowls can be kept on the smallest possible space; but we want to affirm that those who wish to keep poultry, and have moderate conveniences for it, may do so profitably.

We have sometimes treated the subject dividing table from exhibition poultry. We will now put them together. There

is no such thing as a yard where all the fowls are fit for exhibition. One strain may be better than another, but none can win without help, and without the opportunity of much selection. If it were necessary at poultry shows to give a pedigree, as it is at some agricultural shows, there would be much surprise when it was seen how the large yards were indebted to smaller ones, and how much assistance was required to form a prize pen.

Our own experience teaches us, that to exhibit successfully birds of one's own breeding, it is necessary to produce a large number and to pick from them. We are giving an account of that which has happened when we say, that in a large yard filled with the produce of the best birds money would buy, and containing only the pickings of the broods, it was almost impossible to choose a cock and two hens likely to be successful at Birmingham. A neighbour who kept only a few birds, cared for no particular strain, and left them pretty much to take their chance, supplied not only the wanting bird, but of a quality that made success a certainty. This is no isolated case. The competition of a poultry show has supplied to many a pleasing pursuit and a legitimate excitement, and needs only to be put on an inexpensive footing to be still more adopted. The belief that it is necessary to spend a great deal of money to get a prize is a mistake, and the idea that after a great number of good birds has been reared there is no sale for them, is another. As to the first it is essential to have a good walk or pen to begin with, to buy eggs from some one you can depend upon, to hatch your chickens early, and to feed them well from the first. As to the second, recent sales, Lady Holmesdale's for instance, and those at Stevens's all through the season, have proved there is a profitable sale for good birds. We are common-sense poultry-teachers, without the semblance of romance or excitement about us. We want to publish the plain things of the pursuit. We say, then, the days are passed when it may be expected to make hundreds of pounds of a yard of poultry (Lady Holmesdale's was an exception), but good birds will make good prices. We leave shows aside as regular sales, they are few and far between, very profitable when they come. When three or four pens bring £50 or £60, it is a mighty help to the balance sheet. It always gives prestige to a yard. It begins the sale of eggs for sitting. Our columns will testify to the reality and extent of that trade, we may add its profit also. If success can be held on through two years the yard obtains a name, and a dozen or eighteen birds sent in the exhibitor's name and with the guarantee they belong to him, will always meet a sale. We believe we are correct when we say, that at Stevens's rooms both Spanish and Irishmas have made £9 each within these six weeks. We dwell on auctions because they afford an easy and positive answer to that old and frequent question, What am I to do with my surplus stock? and although they do not always command large prices, they always sell without sacrifice.

The poultry pursuit was carried on for many years without any other hope or resource than the sale of eggs and fowls for food purposes, and even then it paid well. With prize money, exhibition sales, auctions, and eggs sold for sitting added, it ought to be under any circumstances profitable now. A bet was made many years ago by a Berkshire farmer to match the produce of two hens against two ewes of a celebrated flock belonging to a neighbour. The hens won. Two picture-dealers lived in the same street; both were good judges of the wares in which they dealt; both took their periodical continental trips, and when they returned were followed by buyers anxious to see their purchases. One sold whenever a profit was offered; the other, shutting himself up in his judgment, named his masters, tacked his faith to their being originals, and put a price on them accordingly. He was every now and then justified in his course, by hearing that his neighbour had sold for a few pounds a picture by an old master that was worth hundreds. In the meantime many admired his, but no one bought. He became bankrupt, the other made a fortune. The nimble nineness beat the slow sovereign. It is so with poultry. If the amateur can afford to indulge his hobby in every way, by all means let him do it, but if it does not succeed he must not complain his pursuit is unprofitable. He ceases to follow it remuneratively, but if it is to account for itself at the end of the year, then constant sales must take place.

Early eggs must be sold at good prices—assuming that the laying season terminates as a rule in September or October, it will be unreasonable to expect hens to begin to lay again in December when eggs are most valuable. Laying in winter is not the characteristic of a breed, but the result of a calculation.

Say that Dorkings or Spanish lay at seven months old, Cochins and Brahmas at six, sometimes at five, then chickens of the breeds must be kept in the spring, so that they shall attain those ages in December when eggs are scarcest. This brings it to a certainty. There are few places where new-laid eggs are not in demand at that time at 2d., in many towns they make 3d. each. In the neighbourhoods in the west-end of London where horses and carriages stand, greengrocers and small shopkeepers keep fowls under every disadvantage, but make them profitable by the sale of eggs. The same may be done by any one. This is an exceptional time of year, but we never yet knew a place where new-laid eggs were not saleable all the year round. They suffer little by foreign competition, and as soon as it is known that they are brought regularly, shopkeepers are glad to buy them. This soon amounts to a sum in the spring.

Then there is the sale of fowls. If they can be reared early they make large prices. In numbers of places poultry is given up as out of season from February till July; none but hard winter fowls are to be had, but if young ones were offered they would soon be gladly purchased. Such would be the refuse of the yard—those that were faulty in some particular. This plan enables any one to breed good and valuable fowls, because it affords the opportunity of great choice. Spring chickens, the most valuable because the scarcest, are fit for fattening at fourteen or fifteen weeks old. At that time their points are sufficiently developed to show whether they are likely to be prizetakers or not. In sorting a run, amateurs should begin by selecting for sale for table purposes all that are faulty; then take the worst of the good ones till there remain only those that are promising. There is not so much difficulty in rearing early chickens as folks imagine. Our experience is, that they are reared more easily in January and February than in March and April. The advantages are many. It enables us to give more attention to those that are likeliest to make the best return; it economises food; it prevents the evils of overstocking, and it keeps up a little supply of ready money. When the selected are attaining a size that justifies another weeding, then send the least promising to the auction. Reserve the best for exhibition and for stock. They may be put at prices that are highly remunerative without being prohibitory, and they will sell, though, perhaps, they may not be prizetakers.

One thing only is wanting, the false pride that is above selling eggs or poultry must be conquered, and the business must be looked after carefully as any other trade or pursuit is that is expected to be successful.—X. Y. Z.

LIGHT BRAHMA POOTRAS.

As a breeder of Light Brahmas for the last fifteen years, I beg to corroborate generally "Nemo's" remarks as to the requirements to be sought for by judges. In the first place, the single-combed Brahmas are as pure as the pea-combed, if not of a purer strain. For twelve years I never had a pea-combed chicken from single-combed birds; after that time, having introduced a cross with a pea-combed strain, I cannot speak so positively; but I venture to affirm that the single-combed Light Brahmas are hardier, better shaped, and better coloured than most of the pea-combed strains.

With Mr. Crook, I say that the Light Brahmas should have a surface colour of clear white, with a ground colour of grey, and, indeed, I should feel inclined to regard a bird as disqualified which did not possess the dark ground colour, as being a cross from a White Cochins. The neck hackles should be well and clearly marked; not a poor, half-marked grey, but a bold, well-defined, striped hackle.

As regards saddle hackle, I believe Mr. Crook and I are at issue, he preferring a well-marked saddle hackle also, whilst I have always bred (until my cross mentioned above), birds with a pure white saddle hackle. With the exception of the flight feathers in the wing, the black white-edged tail, and the hackles (neck or saddle), I venture to submit there ought not to be a coloured feather of any description in a Light Brahma. On the whole, I think they are rather longer-legged than Dark Brahmas, but for the table no bird is equal in flavour to a Light Brahma.—F. POWELL, *Knarsborough*.

Those who favour the Dark birds seem to me to assume that the Light, as a class, are decidedly inferior to the Dark, but I cannot see that they are at all justified in such an assumption.

I readily admit that if you look at the classes separately, the

Dark birds seem the finer; but we should not rest here without further investigation, and, above all, an impartial one; for if we do, we only foster the popular delusion, "that the Light are very pretty birds, but that the more competent a person is to judge, the more certain is he to prefer the Dark."

I believe the main reason why this delusion has arisen is, that any Light-coloured bird corresponding in all points with a Dark one, will not produce the same effect on the eye, the dark outline being more striking. This is the chief reason why the judges at our shows, who must necessarily make their awards according to the impressions they receive at the time, always decide in favour of the Dark. But it is not always first impressions that are most correct; that they are not so in this case we may infer from what we have lately read in *THE JOURNAL OF HORTICULTURE*. I think that after what has arisen, no first-class breeder will be surprised at Mr. Crook's challenge, and all must feel that no one would be likely to beat him, unless it were Mr. Boyle.

I was to-day looking over the yard of an old breeder of the Light variety. I think I never saw a prettier sight than this collection of birds with their well-defined hackles and black tails contrasting with their snow-white bodies, their broad sterns abundantly covered with a delicate white fluff. The birds looked so fine that ever since I have been wondering how the prejudice against them could have arisen, and what cause there could possibly be for its continuance. It cannot be owing to any deficiency in their weight, for there they are pretty equal to their Dark brethren. The only cock bird which I have, more than a year old, weighs 12 lbs. I do not mention this as being an extraordinary weight for a bird of this variety, but to show that they are not inferior to the other variety in this particular. Although I am continually exhibiting, I never brought forward the bird I mentioned more than once, that was at Hastings, when he was second in the adult class. He did not then strike me as being decidedly superior to the birds in the other pens as to size. Now, I do not think the average weight of the Dark birds is higher than 12 lbs., but if it is, we are ready to grant that this is in their favour, still we must be shown it first.

Complaints have been made with regard to the feathering of the Light birds, but apparently without just grounds, at least as regards its quantity, for in every well-filled class there are birds to be seen with massive wings on their backs and feet; not that I maintain that this is right, for I like to see their hocks covered with a rich round knob of soft feathers, clearly separated from those on the feet, which should be adorned with soft feathers, both black and white, well laid on, and very much corresponding to those on the breast. I am surprised that the awkwardly stiff feathering, which seems to incumber the bird rather than belong to it as a natural part of itself, should be aimed at by so many breeders; but as this applies to the Dark as well as the Light birds, it cannot be said to raise them above their more beautiful brethren.—H. M. MAXNARD, *Holmewood, Ryde*.

RAILWAY CHARGES.

I AM sorry the Honorary Secretary of Weston Show impugns the correctness of my statement—that the Secretary of the Show charged me 5s. 3d. for conveyance of birds from the Show to the station.

I beg to say—1st, That I received a letter from the Secretary, in which he says the 5s. 3d. claimed is "for carriage from the Show to the station." 2nd, That my fowls were booked through to Weston, and that there was no question, therefore, on the subject of the Secretary of the Show paying any carriage for me. 3rd, That from the letter of Mr. Percival, of Peckham, in your issue of February 6th, page 119-20, it appears that he was charged 4s. 4d. as "railway charges to and from the showyard," and that no denial of that statement has been made. And 4th, That the report in your issue of January 9th commented on the "great inexperience shown in the management of Weston Show."

As now we have evidence of two exhibitors being charged very high for conveyance from the Show to the station, the management ought to advertise their willingness to return such erroneous charges.—BRAHMA.

TRIMMING FOWLS FOR EXHIBITION.

In your impression of the 20th ult., Mr. Worthington opens up the subject of the fairness or not of trimming fowls' legs

for exhibition. I tried to get some opinion from you a few weeks ago as to the honesty of trimming Spanish fowls' faces for exhibition. I hope, therefore, if attention is called to the one, the other will not be neglected; it is a question of great importance, as tender-conscientious exhibitors have not the same advantage as those who are not so; and, again, a person may purchase a fowl trusting to the honesty of the owner, and after a few weeks have the mortification of seeing feathers come abundantly, and this from a prize fowl. I have been dealt with like this myself, so do not bring forward an imaginary ease. It tends, too, to degenerate the breeds, and to bring poultry-breeding to a low level. Under these circumstances I hope you will give your assistance in sifting the case.—A. H. D.

[We do not think it necessary to repeat our often-expressed condemnation of the practice; but as you ask us so to do, we again say that we consider any trimming of a fowl, except the recognised dubbing of Game fowls, is dishonest. That this is the opinion of poultry judges is evidenced by their disqualifying trimmed birds when the trimming is detected.—Eps.]

UNION OF THE PHILOPERISTERON AND THE NATIONAL COLUMBARIAN SOCIETIES.

THE amalgamation of the above Societies has long been looked forward to as a means of establishing the Pigeon fancy generally, and in the metropolis particularly, on a firmer and more comprehensive basis. The following Report, called for by both Institutions, has supplied a bond of union, and has been unanimously adopted:—

GENTLEMEN,—It will be in the recollection of many members of the Philoperisteron and the National Columbarian Societies, that for some time past a growing feeling of dissatisfaction has been manifested, not only in regard to the objects and constitution of their Societies and other institutions of kindred character, but also in reference to a variety of matters incidental to Pigeon culture generally. Some form and consistence has been given to this feeling by the late discussions introduced, after due notice, at both Societies, on the subjects of establishing the Pigeon fancy in London on a reorganised basis, and the desirability of forming *one* general Society with a more comprehensive constitution. These discussions resulted in the appointment of a joint Committee, representing both the leading metropolitan Societies and every practical department of Pigeon culture; Messrs. Esquilant, Wicking, and Percival acting for the Philoperisteron Society; Messrs. Jones, Ord, and Jayne for the National Columbarian Society; and Messrs. Betty, Merck, and Volckman for both Societies.

Your Committee, then, in approaching their interesting duties, and in endeavouring to report and advise on the basis on which it would be desirable to amalgamate the old Societies or erect a new one, have found it imperative briefly to review the modern history of Pigeon culture, especially on the side of its public relations and estimation.

It will not be beyond the memory of many esteemed fanciers, that years ago a stigma most intolerant and degrading was affixed to any and every matter in connection with Pigeon-fancying—a stigma, indeed, not wholly unreasonable in view of the low associations and merely pot-house character with which this artistic recreation was then encumbered. But under the worst of circumstances this naturalistic department was never left without a few persevering votaries with courage enough to scorn mere prejudice, and energy more than sufficient to rescue their pastime from every possible reproach—gentlemen whose society we yet enjoy, and to whom we owe it that we can resent as an impertinence any and every attempt to ignore our pretensions to the same standing and consideration conceded to floriculture and other amusements of similar character. Whatever, therefore, of mere blackguardism, dishonesty, or equivocal association once existed (or in a degree may still exist), the elements of reform were never wholly wanting.

Nor will it be matter for surprise that such improvement when embodied took a form highly conservative, exclusive, and re-actionary. Under the circumstances this was but natural, and was clearly necessitated by those adverse conditions to which your Committee have referred.

The formation of the Philoperisteron Society just twenty-one years ago was the first embodiment of such reform. And the Committee would here remark, that the very first experience of this Institution demonstrates unmistakably the necessity for the reform itself, and illustrates to the utmost the low estimation in which Pigeon culture and Pigeon-fanciers were held; for with whatever ease the Society took to itself a "name," its search for a "local habitation" was by no means so successful. That a Pigeon-fancier should aspire to the society of gentlemen (even the gentlemen of a third-class hotel), was effrontery too daring, impudence too intolerable; thus, members of the highest respectability, who to-day are assembled in the wide-renowned "Freemasons," were hustled rather than bowed out of many a tavern in which they sought the convenience of a room for their monthly meetings—many a place, indeed, which now would not be considered eligible for our present purposes or position.

It would be superfluous to recite the oft-told history of the Philoperisteron Society; suffice it to say, that its constitution and labours effected a substantial and growing, though not a rapid, reform; supplied the means of social intercourse amongst respectable fanciers, and won a measure of public esteem never before accorded to Pigeon culture or its votaries. In the practical department the Society has fostered and expanded the taste of fanciers, and its members have bred and exhibited the choicest specimens ever seen in almost every variety of Pigeons.

Perhaps, however, the surest indication of success may be found in the fact that the Society, in some measure, may be looked upon as a parent Society; for the impetus it gave to the whole subject developed the necessity for a yet more inclusive association, and the growing necessities of metropolitan fanciers at last found their answer in the formation of the National Columbarian Society, a Society in many ways thoroughly worthy of its ancestry, and several of whose members are members of both Societies.

We are now brought to a review of the *present* position of fanciers and their art in public esteem.

Although it must be conceded that very great advances have been made, especially on the score of tone and respectability, and although our recreation is not simply tolerated, but is widely and generally approved and admired, yet such advances in the higher senses of the term are still largely undeveloped, and much that is equivocal remains for redress or discouragement. This is evident in the fact, that numbers of fanciers, gentlemen and even ladies of intelligence, enthusiasm, position, and liberality, still hold aloof from any recognised or corporate relations with their brother fanciers. Reasons for this may be found in abundance. It is not that any social stigma any longer attaches to us or our objects—that has long ago been rectified. It is because we are failing to interest and failing in many ways to complete the reformation so worthily begun.

This, again, will be very apparent on comparison of Pigeon culture and Pigeon societies with other kindred amusements—for instance, floriculture, horticulture, &c. These departments of naturalistic recreation are progressive, intelligent, scientific, and developed in character. They can boast a literature and detail of great importance; their Societies are invested with many and varied features of interest, and, therefore, are in the highest degree attractive and influential.

Pigeon culture, on the other hand, although of most ancient date, although of eminent interest and enthusiastically practised, still lacks almost every element of progressive success. As yet it is essentially undeveloped, unscientific, wanting in dignity and intelligence, boasting no literature of adequate extent, character, or accuracy. It is failing to utilise the immense resources of interest which it commands, it is still disgraced by many associations more than questionable, and still lacks, therefore, those incentives to corporate union which have done so much for the advancement, repute, and influence of kindred Societies.

Your Committee are of opinion that these evils are intensified by the division into two Societies of a constituency far too small to bear sub-division at all; and they are further of opinion that while such division exists, no purpose, however desirable, can be effectively pursued, in consequence of the inherent weakness incident to such division.

Your Committee feel, too, that little or no excuse exists for so disunited a policy. A large number of members are common to both Societies; the constitution, objects, and practices of both Institutions are identical. Much complaint, too, very reasonably arises on the score of loss of time and expenditure. A gentleman anxious to be on terms of acquaintance with the leading metropolitan fanciers must now join two societies, pay two subscriptions, attend double the number of meetings, exhibit every bird twice, at probably much inconvenience to himself if not injury to his stud.

The results are obvious. Although the subscriptions are paid readily enough, their division into two distinct funds renders them almost inoperative for good. Both Societies suffer in many other ways. Meetings are shorn of almost every feature of interest, are badly attended, birds are not shown, papers cannot be read, discussions are not introduced. The allegiance of members being thus divided and weakened, a general blankness and lukewarmness prevail, and becoming more and more irksome.

It is high time, therefore, to inaugurate a more trenchant and united policy, and your Committee can see no reason why a system more progressive should not supersede the present condition of stagnation and inaction. Why, they inquire, should there not be facilities, as in the domains of floriculture, for the introduction of more improving elements? Are we so far ahead that there is nothing left for a Huxley, a Darwin, or an Owen to teach us? Have we, even in the humbler departments of our recreation, so completely exhausted every field of interest, that there is nothing left for investigation, and no items of mischief for redress or eradication? In an age when even recreation itself is expected to include some features of intelligence and worth, your Committee are of opinion that fanciers will not be true to themselves if they omit to enlarge the basis of their union, or to place themselves on a level with the patrons of other naturalistic pastimes.

And this brings us directly to a consideration of the means it is desirable to adopt in order to give renewed vigour to our present Institutions. On this subject your Committee have formed very decided opinions, and are prepared respectfully to offer most earnest advice.

However much they may approve of union for its own sake, they feel that a mere amalgamation of the Societies they represent would in itself be powerless to effect any radical change. It has already been stated that the practices and constitutions of both Societies are identical, and, it may be added with equal truth, are totally inadequate to the examination and settlement of the questions under review. Neither Institution can boast anything beyond the most meagre arrangements for social intercourse; while the opportunities for discussion are of the most flimsy, not to say delusive character.

In every other respect the constitutions in question are far too contracted for the growing requirements of our recreation, and stand condemned by the indifference with which members treat any advantages they may offer.

Your Committee, therefore, propose and earnestly recommend a scheme of thorough reorganisation as indispensable to the awakening of new interest, and as paramount in importance to any scheme of mere amalgamation. Such reorganisation might and should include the union of our two Societies on a basis at once comprehensive and progressive, and with a constitution sufficiently broad to secure the intelligent consideration of any and every matter of moment relating to Pigeon culture. In view of the ample materials which exist for the energy and occupation of every member, and in consideration of the objects proper to such a Society, your Committee are of opinion that the proposed reorganisation should include the following matters as prominent features of its scheme:—The formation of a literature adequate and accurate in character, and the diffusion of useful information; the development of an internal public opinion for the reform of abuses; the formation of authoritative standards for all the important varieties of Pigeons; the better classification of prize lists; the improvement of judging.

Such a Society should also undertake and establish a grand metropolitan competitive show as an annual feature of its scheme; should be a tribunal for the investigation and authoritative settlement of controverted questions within prescribed limits; should develop and encourage proper methods of breeding; should discourage diffuse and unscientific breeding; should consider the mischief arising from indiscriminate exhibition, and the deterioration going on in almost every strain; should assist beginners in their formation of a stud, and thus protect them from loss, disappointment, and the designs of unscrupulous sellers.

Such a Society should also include the fullest opportunities for orderly discussion, and should invite papers from experienced fanciers, naturalists, physiologists, and other men of science on any and every matter directly or indirectly relating to Pigeon culture, its advancement, or past history; should enlist the arts of painting and photography; should encourage and keep up communications with provincial and foreign societies, and thus centralise and consolidate the fancy throughout the kingdom. Such a Society, in addition to the facilities at present offered to subscribers, should also arrange for the enrolment of honorary members, especially gentlemen of naturalistic science, and should afford every convenience for the occasional introduction of visitors; should keep careful records of its transactions, and do all in its power to place its objects on an equality with other naturalistic pastimes.

Such, then, briefly, is the scheme your Committee are prepared to recommend. If at the first glance it may appear too comprehensive, they urge that it by no means implies that all and everything they have proposed should at once find exposition or development. Their object is rather to make proposals sufficiently broad to appeal to workers in every department, however varied their taste or inclination, so that no item of advancement or improvement may be wasted for want of opportunity or encouragement.

But little need be said as to the practicability of this scheme. Its prompt initiation may be compassed by the union of the Philopisteron and the National Columbarian Societies under a constitution and code of regulations expansive enough to include the suggestions of this Report. The two Institutions thus united would form a centre of no inconsiderable attraction, not only to the fanciers of the metropolis, but of the kingdom, in view of our present and increasing strength in country members. And your Committee again submit, that the strong feeling in favour of union, together with the fact that many gentlemen are already members of both Societies, is evidence sufficient to justify such amalgamation. They are convinced, too, that their scheme of a thorough reorganisation, coupled with amalgamation, will not only advantage both Societies, but will be of untold benefit to the art generally; and will be accepted as a boon by all intelligent fanciers, many of whom have long felt the necessity for an Institution more authoritative and dignified in character than can be found amongst existing Societies.

In conclusion, your Committee beg to express the pleasure they have had in accomplishing the important task entrusted to them. While they see in the past much of difficultly vanquished, and much of success achieved, they look to the future with a measure of expectation amounting to assurance, for advancement in those yet wider fields of effort and amusement which remain to be traversed, convinced also, that a yet more discriminating appreciation will be accorded to the captivating branch of naturalistic recreation which so long and so deservedly has been our bond of pleasure and fellowship.

Signed for the Reorganisation Committee, W. VOLCKMAN, Hon. Sec.

[We are very glad at this movement, for union imparts

strength. We recommend Pigeon-fanciers generally to support the new Society, and we shall readily find space for any relative suggestions.—Eus.]

BREEDING POUTER PIGEONS—CANKER AND ROUP.

I READ over carefully Mr. Volckman's article on Pouter-breeding, which appeared in your columns on the 6th of February. As an old fancier, I must say that I cannot agree with his remarks on breeding for colour.

I have had considerable experience in Pouter-breeding during the last thirty years, and have during that time seen the fancy for those elegant birds sink until it seemed almost lost, but for three or four who stood steadily by it; but now it has risen higher than ever, and long may it continue to gain ground; for if, as some or rather most writers say, the fancy breeds are all derived from the Blue Rock, then, I think, the Pouter is entitled to be considered the most wonderful of the whole, showing such size, beauty of form, and colour, with the stately walk so very different from the "pottering" style of the other sorts; and last, though not least, his extraordinary crop which he can display at pleasure.

Mr. Volckman seems to take it for granted that colour has to a great extent been lost. In this I cannot agree with him, unless, perhaps, in the case of Red Pied birds; they, certainly, as a class are not so good in colour as they were twenty-five or thirty years ago. This I am convinced has been caused by crossing with blue, and a very ugly colour it produces. Blacks, Blues, and Yellows are all in my opinion as good as they have ever been.

In one respect, however, I quite agree with Mr. Volckman, and that is, that marking has fallen off very much, which is certainly to be regretted, as a fine bird is so much more pleasant to the eye when regularly pied. The bib in particular is now very often wanting, and bishop wings by far too common, but a few years' care will bring them up in this respect. Foul legs I also think are more to be seen than formerly, and a great blemish they are. At one time this was almost confined to Black Pied birds, and it seems to have been the case as far back as Moore's time, and to have been so common in Blacks that he says it was not much heeded, unless very bad. I have done all in my power to breed clean-limbed birds of this colour, but must confess that I have not succeeded; indeed, with only two or three exceptions I have never seen a well-pied Black Pouter with perfectly clean thighs, unless in show pens. Birds that are too gay, have too much white on the wings or crop, are always clean-limbed.

Mr. Volckman is of opinion that Mealy and Chequer birds have injured the colours. Now, I do not think this has ever been the case where birds have been properly matched, it all depends upon this; but I can assure Mr. Volckman that many of the finest birds that have been bred in Scotland have been from Mealy, Chequer, or Sandy birds, matched with birds of the standard colours. Some colours will not do long without crossing. Yellows, for instance, bred together soon become pale and faded-looking, but a well-selected Red improves the colour at once. I think I have tried nearly every cross in colours. The worst result was from Black and Yellow, so bad that I must say I did not repeat it often. The young were of a dirty, sooty, Chequer hue.

Mr. Volckman says that many of our birds are too long in feather for the length of limb. This we are quite aware of; but he is, perhaps, not aware that when the Scotch fanciers began the breeding of Pouters, they had little better than Pouting Horsemen to commence with, but now they mean to turn their attention more to length of limb and marking. The former will require both time and skill, the latter will be more easily managed. I have often heard of birds 7½ and 7¾ inches in limb, but never happened to see them.

I hope Mr. Volckman will give the method of breeding he so strongly recommends a trial, and let his brother fanciers know the result; but for my own part I do not think we can throw aside Mealy, Sandy, Chequer, or Splash birds, any more than the Almond-fancier can dispense with Kites, Duns, Grizzles, &c., though he may have a large stock of good Almond-feathered birds.

On looking at a Canary-fancier's stock lately (I am not a fancier myself), I very much admired the yellow birds in preference to the buff or white, and asked how he did not keep yellows only. His reply was, that they could not get on without the light-coloured birds; they would all run to "weeds,"

he said, if yellows were bred together. I may also mention Carriers and Barbs as proofs in favour of my opinion, as breeders match the best Blacks with Duns without injury to Blacks. The result of my own experience, therefore, is, that we cannot dispense with the colours which Mr. Volkman says should now be thrown aside as having been used more than enough already.

I always use Splash birds more or less for breeding Whites, as I find I obtain finer birds in size and shape than from Whites alone, and if the right sort of Splash is used very few marked birds will be produced.

Before concluding, I should like to say a word on the question of infection. I am quite of Mr. Huie's opinion, that roup and canker are not infectious.

Canker in my birds, I am glad to say, I have never been much troubled with, but now and then a case has occurred, but never spread, though left with my other birds.

Roup my birds have suffered very much from. I do not think, however, that it is now nearly so virulent in character as when it first appeared in Scotland about fifteen years ago. Till then it was unknown to the fancy here, and for a year or two almost every bird attacked died; no treatment had any effect. Now, I believe it is often cured; but whether this is owing to superior treatment, or to the disease being in a milder form, I cannot take upon me to say. Something, very likely, is due to both.—GEORGE URE, *Rosebank, Dundee*.

P.S.—Mr. Volkman takes care to let us know that he has had a long practical experience with this class of birds. Such being the case, why has he not given even a single fact from all this experience? I think he ought to have done so before condemning so hastily. I might almost say rudely, the method of breeding followed by the oldest and most successful Pouter-breeders.—G. U.

MR. HUIE'S criticism on Mr. Tegetmeier's book entitled "Pigeons," in which I fully concur, has been the means of commencing much-needed and most useful discussions in your valuable Journal, and I hope that they will extend until all the varieties of Pigeons have been fully discussed. As there is much still left to be said in connection with Pouters, my remarks will be on that grand bird.

I quite agree with Mr. Huie when he condemns some of the crosses in colour recommended by Mr. Tegetmeier, such as crossing a Blue Pouter and a Red, or a Mealy and a Yellow. Any good fancier who has tried the experiment will not repeat it in a hurry, or recommend others to do so; and I was very much astonished and disgusted to find such advice given in a book said to be written "for the use of the Pigeon-fancier." No experienced fancier, at all events in Scotland, has any "slavish fear of breeding away from some one particular colour," but to the best of their judgment they select such birds as they think suitable for producing the most perfect colours, at the same time keeping in view size and form.

I read in the Journal of the 6th ult. the remarks by Mr. Volkman, who says he has not read Mr. Tegetmeier's book; at which I feel astonished, as I did not consider any real fancier could withstand reading a work on Pigeons produced by one who has figured as judge at some of our principal shows. However, I do not think Mr. Volkman has lost anything by this neglect.

Mr. Volkman enters into this discussion "irrespective of Mr. Tegetmeier's book or its reviews," and says "the correspondence appears to be proceeding on a wrong basis." Now it appears to me that the correspondence has not only proceeded on a right basis, but that it has been fully argued and satisfactorily concluded. The question raised was merely on the matching Mealy and Yellow Pouters.

Mr. Volkman tells us that by the use of Mealies, Chequers, and Splashes we have destroyed the colours and markings in our Pouters, and that for the present they must be "rigorously discarded." On the other hand, Mr. Tegetmeier says the Pouter-fancier has a "slavish fear of breeding away from some one particular colour." Now, this is an awkward position for a young fancier to be placed in: whom is he to believe, and what is he to do? My advice would be, as we have no printed guide, to adopt neither theory, but use Mealies, Chequers, and Splashes in their proper places, and he will find to his own satisfaction, as I have done, that practical experience is safer than theory.

Mr. Volkman says, if we wish to produce "Blacks of raven brilliancy, Reds rich and lustrous," that we are now to commence the process of selection. For the information of Mr. Volkman, I have to say that the experienced Scotch fanciers

have finished this process of selection for the coming breeding season a month ago, and that they have matched-up their Pouters this season in the same manner as they have always done—viz., selecting the best colours that they have of their own breeding, or could find to purchase; but if Mr. Volkman could spare them some of the brilliant colours that he speaks about, the Scotch fanciers would feel very grateful to him; and I am sure that a fancier of "long practical experience," and having such a good theory, must now be in a position to extend a helping hand to his less fortunate brothers in the Pouter fancy.

The proper crosses for the Mealy and Yellow Pouter have been already taken up by Mr. Huie. As far as my own experience goes, and from observation in the lofts of our best Scotch breeders, I believe that the Chequer bred from Blacks should be crossed with Black only; and by following this method a Chequer Pouter will be quite as good for stock purposes as a Black, and the produce he "Blacks of raven brilliancy."

I also approve of occasionally crossing the White Pouter with the Blue. The White Pouter being constitutionally a weak bird, the produce is improved in strength by this cross; and the Blue gains in colour, as the White Pouter helps to clean out the foul feathers so often found in the limbs, &c., of the Blue Pied Pouters. It was from a cross of this description that I produced the progenitors of the White and Blue Pouters that stood first at Glasgow for more than one season.

When breeding for length of feather I would have no hesitation in selecting a small handsome hen, as I have found such to be the best breeders and to produce large birds, and I could point to a great many first-prize birds from hens of this description. Although I say a small hen, I would not have her to be under 17 inches in feather, and 6½ in limb.

It is always desirable to match what is termed a stocking-limbed bird with a rough-limbed bird, as by this means we keep the limb strong and having the proper cover of feather.

Two birds having stocking limbs matched-up are apt to produce birds spare of cover, and even birds with spindle shanks.

When matching-up Pouters for a season's breeding there are a great many points to be considered, such as length of limb, length of feather, girth, crop, colour, marking, &c. Now, as it is almost impossible to find one Pouter having all the properties, the best method is to select two birds that with both their points combined come nearest to perfection. When we do this we do all that we are able, and it is not absurd to expect a happy result. The finest-marked birds will often produce the mismarked birds. The plan I take to cure this is to destroy the bird in the nest. If this method were adopted by all our Pouter-fanciers it would soon rid the fancy of those birds complained of as having markings "wildly inaccurate." It is also advisable to have one of a pair matched-up older than the other, as a pair of young birds seldom do well the first season.

I have seldom had a case of canker among my Pouters, but find that my Short-faces are very subject to this disease. The method that I adopt to cure them is the old simple one of washing out the mouth, and then touching the affected part with caustic, also giving them occasionally a piece of butter mixed with salt. This disease is certainly not infectious.

The roup has been for years, and still is, a source of annoyance to me, particularly among my young Pouters. It attacks young birds at no particular age. I have seen birds take it when two weeks old, and again when they were breaking into their first moult, and it often hangs about them until they are reduced to skeletons, ending in something like consumption. I have tried many, almost all methods of cure, and when I thought I had found one effectual, again I was disappointed.

The treatment that I have most faith in is to keep the bird in a warm place, and in a hamper with straw, give it a teaspoonful of cod-liver oil night and morning, occasionally taking the bird in the hand, and rinsing its head through cold water. I have never found one case in which roup was infectious. For the sake of experiment I matched-up a Pouter hen very much affected with roup to a common Pigeon, and confined the pair in a pen for a couple of months, allowing them to eat and drink out of the same dishes, but the disease did not affect the cock.—M. STUART, 73, *Waterloo Street, Glasgow*.

UTILISING CONDEMNED BEES.

WITH regard to "A DEVONSHIRE BEE-KEEPER'S" useful paper on the above subject, I may mention, having the autumn before last saved from the brimstone pit the bees of two stocks,

belonging to a neighbouring cottager. I substituted a couple of young Italian queens in lieu of their own sable monarchs, placed each party in a common straw skep, having a little empty comb, at the same time administering a fair supply of "Greenock crush" syrup, and in due season was rewarded for my humanity, each colony last summer giving me four natural swarms, and by no means contemptible swarms either.

An apiarian friend chancing to call while one of the fourth swarms emerged, was positive it contained more bees than a prime black swarm he had had shortly before.—A DEVONSHIRE BEE-KEEPER.

TO WHAT DISTANCE CAN BEES PROFITABLY EXTEND THEIR FLIGHT?

I FIND it stated in reply to "A. T.," in page 180, that "the bees' honey harvest depends upon the country within a radius of five miles;" or, in other words, that a stock of bees can pasture profitably over a district of ten miles diameter! I only wish it were true, for honey harvests would in this case be vastly more abundant and far less uncertain; but unfortunately, all reliable authorities concur in limiting the profitable flight of the bee to a much more restricted area, whilst my own experience and observation impel me unhesitatingly to endorse their conclusions. Mr. Quinby and the Rev. L. L. Langstroth, who stand at the head of American apiarians, concur in stating three miles as the limit of the bee's range. The latter adds that beyond a circle of two miles radius they can store but little honey. Huber found on one occasion, that whilst his own bees were going to ruin for lack of food, those of other places at about two miles distance lived in the greatest abundance, threw numerous swarms, and filled their hives with honey; whilst Dr. Bevan believes that one English mile will be found to be the extent of the bee's flight in her ordinary excursions during the honey season. That bees cannot pasture profitably much beyond a radius of a mile, or at the outside a mile and a half from their hive, is also the conclusion arrived at by—A DEVONSHIRE BEE-KEEPER.

[Bees are known to visit an island more than four miles from the shore.—EDS.]

ARTIFICIAL SWARMING IN COMMON HIVES.

A CORRESPONDENT, "C. A. J.," commenting on my instruction in No. 361:—"The next day remove B to a new stand . . . and put A on the stance vacated by B," asks for my "reasons for not immediately placing the lives in their permanent positions." To this I reply, that it is better to let the confusion subside which naturally arises in an apiary at such times; but, chiefly, I desire to give time for as many as possible of the old bees to quit the hive A, so as to run less risk of fighting when the transfer of hives A and B takes place. If the first operation (of driving A) be performed before 10 o'clock A.M., there would be no objection to put the deserted A into B's place three or four hours later, taking care that the former is pretty well emptied of its population, and that the bees of the latter are much abroad at the time of the transfer. This is essential to success.

"C. A. J." asks further, "Does not the undeveloped brood in A run the risk of a check during the intervening night, there being so few, if any, bees in the hive?" Doubtless, there is some such risk, but I believe it to be very trifling. There will always remain a considerable number of bees, which, being in a state of excitement consequent on the loss of their queen, will keep up the temperature; but I should put the hive in a sheltered place, and throw something warm over it. My experience knows of no failure on this score, although, of course, it is conceivable.

"C. A. J." also remarks, "I presume there is a great possibility of the hive being robbed, it having no bees to defend it." A possibility there no doubt is, but I never knew an instance of it. Bees very rarely look out for plunder in May or June, being usually too fully occupied with pollen and honey-gathering at that period of the year. Of course, if those operations are attempted later in the summer, the utmost care is requisite to prevent robbery; but I strongly dissuade from all swarm-manufacture after June.

I may add here, in reply to an inquiry of another correspondent, that I usually set about swarm-making as soon after

nine o'clock as possible—as early as I can, in fact, but not before the bees are well abroad.—B. & W.

OUR LETTER BOX.

MARKING CHICKENS (Rouen).—If you wish to mark chickens so that they are easily distinguishable without catching, you may do it by having narrow strips of list sewn round their legs, loose enough to admit of growth. Different colours may mark different breeds. If you do not object to the trouble of banding, and it is not much if done when they are at roost, they may be marked by cutting alternate feathers of the wing. This is, however, only useful as long as they are chickens. The best plan we know for permanent marking is to perforate the web of the wing with a red-hot iron—a large knitting-needle will do. The mark is never effaced, and there no limit to the numbers that may be differently marked. It is done in a moment, and the birds suffer little from it. Your second question is a disputed point. Our own belief is you would have no produce from the second till the hen had laid all her eggs, and become broody. We know excellent judges and trustworthy authorities who hold a different opinion.

FOOD FOR LAYING HENS (B. B.).—Whole barley is very good. It should be given raw. If crushed, the husks should not be taken away.

FOWLS DYING SUDDENLY (T. C. H.).—There is nothing to prevent sudden death in fowls. Cocks are liable to it when crowing, hens when sitting or laying. Sitting hens should not have whole corn. Soft food is better for them. It will not be hereditary.

BRAHMAS' COMBS (Idem).—The pea comb has never been considered a disqualification in either class of Brahmas. Our experience of breeding the Dark is the same as yours, but we are bound to say the same of the Light. We never breed single-combed birds. Our belief is, they have their origin with those who are bent on making money, who obtain a pure bird at a good price, on one side, and a mate as nearly like him as possible. They sell the failures for table poultry, and those that take after the father for stock. The unfortunate purchasers soon find their acquisition is the result of a *misalliance*.

SCREE ON COCHINS' LEGS (Lutterlin).—We cannot tell you the cause. We have never seen it as a disease till this year, and always attributed it to snow. We have, however, heard of it where there has been no snow. It was always common amongst very old birds. We have, however, pullets that are now "down with it," literally. They seem to have lost all use of their legs below the thighs. We have cured some with sulphur ointment and principally vegetable diet, but we have some of which we despair.

LOCKS OF COCHIN-CHINAS (C. K. S.).—Any vulture hook would be a disqualification shown against birds free from it. That which you have figured is not a vulture hook; it is a turn in the feather common to most of the breed. You cannot have a better strain than Chase's.—B.

CAPONISING (J. G.).—We cannot detail the mode of performing this cruel and totally needless operation.

GROUND OATS.—"G. P." obtains ground oats of good quality from Messrs. J. & H. Robinson, of the Lewisham Bridge Mill, Lewisham, Kent, S.E. It is cheaper to buy by the sack or half sack than by the bushel.

CARRIER PIGEON'S EYE (J. R. J.).—Your treatment is good, but we would advise you also to wash the parts with a weak solution of alum and water.

DRAGON PIGEONS (J. T.).—We do not know where you can purchase superior birds. You must refer to our advertisements, and have the birds sent for inspection before you pay.

BIRD WITH DISEASED TONGUE (E. H. F.).—What bird is it?

PARROT SELF-PLUCKED (A. S. A.).—Never give hempseed to a Parrot. Let the bird have a tepid bath daily. This is easily done by filling a dish with the water. If he will not bathe voluntarily, pour the tepid water over him through the rose of a watering pot. Let him have nuts and apple.

TRANSFERRING TO ANOTHER HIVE (C. H. Stock).—You can only transfer your stock to a frame hive in the manner described by us in reply to "SCOTCH" in No. 318; but as this is rather too difficult a task for a novice, you had better let things remain as they are, and wait for a swarm. Payne's hives are about 2s. 6d. each, or you may, perhaps, have them made for less by a country hive-maker. Bell-glasses vary in price, according to size and the quality of the glass of which they are made.

FORMING AN ARTIFICIAL SWARM (—).—The best mode of making an artificial swarm from either a bar or frame hive is thus described in the Bee-keeper's Calendar of "The Gardener's Almanack" for 1868:—"Look over the combs during the middle of a fine day until the queen is discovered, then place the comb with her majesty upon it in the centre of an empty hive, and, if possible, support this comb on either side by two spare worker ones. Put the queen in her new domicile on the old stance, and remove the stock hive to a new position at a short distance. The returning bees will make up a good swarm, which, if the weather be favourable, will rapidly fill its hive with combs, whilst the bees in the old stock raise a queen, and all will proceed much in the same manner as if the hive had swarmed naturally." To this we may add, that the abstracted comb should be carefully examined, in order to ascertain that no queen cells are attached to it. If any be found, the queen must be transferred to another comb, and the royal embryos returned to the hive. The fatal objection to the course you propose is that all the combs built during the interregnum, which must ensue in one of the hives, will be drone combs, whose existence will prevent the colony from prospering.

OLIVECAKE FOR COWS (B. B.).—Olivecake certainly enriches the milk very much, but it does not increase the quantity. Brewers' grains, soft mashies, or similar food, tends to increase the daily yield of milk, but it becomes very poor. We have for some years given about one cake per day to half a dozen or more of our cows that seemed to require it most, and we have not experienced any bad results from its use, either in the flavour of the milk or otherwise. Perhaps there is nothing to which an unpleasant taste is imparted so easily as milk, and very possibly an over-supply of olivecake might have this effect; but we have found less cause to complain of this than anything else given to the cows to improve their yield of milk. We warn the inexperienced about the kind of cake they use; that from rape seed is very acrid and irritating, though useful as a fattening agent, and when it is mixed in any quantity with the linseed cake it is also bad. Cotton cake is nearly as bad. Good linseed cake should be obtained.

WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 19—25, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
19	Th	Meet. of Royal, Linnean, and Chemical	51.3	33.2	42.2	14	6	16	11	46	59	43	13	1	25	7 48	79
20	F	Meeting of Royal Institution. [Societies.	51.4	33.8	42.6	16	4	6	12	6	32	4	14	2	26	7 30	80
21	S	Royal Botanic Society's Show of Spring	50.7	32.4	41.5	18	1	6	14	6	2	5	16	3	27	7 12	81
22	Sun	4 SUNDAY IN LENT. Flowers open.	50.4	34.2	42.3	19	59	5	16	6	28	5	21	4	28	6 54	82
23	M	Meeting of Royal Geographical Society.	50.5	33.0	41.7	17	57	5	17	6	53	5	29	5	29	6 35	83
24	Tu	Meeting of Institute of Civil Engineers.	48.5	31.7	40.1	15	55	5	19	6	15	6	33	6	●	6 17	84
25	W	Meeting of Royal Agricultural and (Geological Societies, and Society of Arts.	50.9	32.5	41.7	15	52	5	21	6	39	6	44	7	1	5 58	85

From observations taken near London during the last forty-one years, the average day temperature of the week is 50.5°; and its night temperature 33.0°. The greatest heat was 69°, on the 19th and 20th, 1836; and the lowest cold 16°, on the 20th, 1845. The greatest fall of rain was 1.11 inch.

HEDGES, AND SHRUBS SUITABLE FOR THEM.



NOTHING, perhaps, to the lover of Nature adds so much to the cheerful aspect of a district as the hedges by which it is intersected, and the timber and other trees with which it is clothed. The latter stand out in bold relief in the picture, while the hedges fill up those necessary lines without which there would be a certain amount of blank. A good hedge is in many instances a farmer's pride, and in this respect he looks at it in a different light from the admirer of rural scenery, to whom the more crooked the hedge and the more heterogeneous the plants of which it is composed, the more beautiful it appears; while to the farmer a hedge occupying the least possible space of ground, straight in its outline, and forming an impassable boundary to cattle, is the approach to perfection which he delights in.

During the last thirty years great progress has been made in this direction, and we may expect to see still further advances. In districts where hedges once existed in too great numbers these have been entirely swept away, and their real merits have not been spoken of, much less considered, in consequence of the many evils they engendered; yet hedges have their uses, and I hope again to see those large breadths of some of the fairest land in the realm, now only subdivided, into large compartments by an invisible wire fence, again intersected by hedges of a suitable size and form—not a confused mixture of Hazel, Maple, Elder, Willow, and various shrubs, but neat Thorn hedges, kept clean and orderly. These, although they may harbour a few birds, need not necessarily be a nursery for weeds and other evils, and it is questionable if birds to a limited extent are not rather an advantage than otherwise. Hedges, apart from their utility, are a necessary feature of the landscape in most districts. The want of them, as in the fen and marsh districts, where high cultivation exists, causes a sad blank in the winter scenery; but it is not in these cases only that I advocate their adoption, but in some of those large tracts of land, where a few years ago they occupied a space equivalent in some parishes to one-sixth of the whole area. In remedying this evil people ran to an opposite extreme, and the unmerciful annihilation of large breadths of hedge and coppice has quite altered the character of the district. In such cases a few neat well-managed hedges might be useful; and as the materials for such and the mode of managing them differ considerably in various districts, a slight notice of what appear to be the most approved may, perhaps, be of service to those intending planting.

Yew.—As an ornamental hedge this unquestionably stands first, alike for its fine appearance and durability. Yew hedges in the neighbourhood of some residences date back to a very remote period; in fact, it is difficult to place a limit to the age which this plant under favourable circumstances will attain. Hedges of it when subjected to close and severe pruning seldom live so long as those allowed more space to expand themselves, nevertheless a

Yew hedge may often be met with whose external character has shown no change for a long lifetime; possibly very accurate measurement might detect some advance in one-half or three-fourths of a century, but some venerable hedges of this plant are said to have presented but very little change during that period.

In general the Yew likes a high and dry situation, and is most frequently met with in a wild state on the exposed cliffs of our chalky hills. It is, however, very accommodating when in a cultivated condition, for it is often planted and found thriving in a soil and situation just the reverse of the above—in a stiff clay, perhaps, and is met with growing very well under trees where few other plants would live. From its dense growth and hardness it deserves to be planted more frequently in the shrubbery than it now is; and when we contrast its appearance with that of kindred foreign Conifers, as *Taxodium sempervirens*, we certainly have reason to be proud of our native Yew as excelling in every respect, excepting perhaps in altitude, all of these. It is, however, as a hedge plant that I here advocate its being planted, and as such it occupies a high position; for although its slowness of growth may in some cases be urged as a fault against it, yet in favourable situations it grows more freely than may be supposed; it bears transplanting well, and its sturdiness and elasticity are such as to prevent its suffering much from accumulations of snow. But in one respect Yew is inferior to most of the hedge plants mentioned below—it cannot be regarded as a fence against cattle, for its poisonous properties render it dangerous. Although sheep and other animals grazing on those hilly districts where it is found will feed occasionally on it with impunity, and rabbits eat it when in their way, yet domesticated animals often suffer fatally when they partake of it. When, therefore, it is necessary that the Yew should be a boundary, let it be protected by wire or other fencing from the attacks of cattle; its importance entitles it to this care, apart from the danger referred to.

HOLLY.—Next in merit, and in the opinion of many equal to it if not excelling the Yew, is the Holly, also a native plant adorning some of our woods with its glossy foliage and coral-like fruit. Its associations connected with Christmas and other festive occasions give it almost as much a claim to our veneration as the Yew. As a shrub or tree for hedges it grows more rapidly than the Yew, and forms a more impenetrable fence against bipeds and quadrupeds when it has once become fairly established. It is better adapted than the Yew for moist situations. It is also suited for forming a high rather than a low and small hedge, and is impatient of continuous cutting to a limited height; still Holly hedges are often met with in excellent condition, and some that I know may be regarded as ornaments to the district. The Holly is also more hardy in a certain sense than the Yew, being found in a wild state farther north; and I believe some of the finest Holly trees in the kingdom are in the north. The Holly, like the Yew, has the advantage of succeeding under the shade of other trees. A somewhat stiff soil, with plenty of stones in it, and not too dry, seems to suit the

Holly best. Care must be taken to prevent the plant being destroyed by rabbits, if they abound, as they are very fond of this tree. May is about the best time to plant, if the weather is not too dry at the time, and if the plants have been removed a year or two previously they will be all the better, as the Holly is not the easiest plant to remove successfully. It may be remarked that it is not bad practice to plant a Holly here and there in a Quickset hedge, say one at every 6 feet or so; the Hollies thus look cheerful, and give more shelter in winter than the Quicksets alone.

Privet.—This plant occupies a position many grades below the Yew and Holly, but it has the advantage of soon attaining the requisite size, is not particular as to soil or situation, and will bear cutting into form at any time of year. It may also be planted at almost any time; its drawbacks are its inability to support itself against heavy accumulations of snow, and that late in the winter it is almost denuded of leaves. To give it strength it is better to plant Quicksets (Whitethorn), with it, say one plant in three, and the close interlacing of its shoots partially compensates for the lack of foliage in March and April after a severe winter. The chief merits of Privet as a hedge plant are its rapid growth, the trim appearance which it presents when fresh cut, and the great accuracy with which that operation can be performed without danger to the plant; it is also less injured by rabbits and hares than the Whitethorn, but is not entirely exempt from attack where the former are numerous. Privet will thrive in almost any soil, but if planted by the side of a rich border, it will exhaust it more than is proper for the other plants. On the other hand, it will grow under trees where hardly anything else would succeed, and is on many accounts useful.

Box.—It is scarcely necessary to remark that this is still more slow of growth than the Yew, and the number of tall hedges of Box is necessarily few; but there are cases in which a low hedge is wanted, and where variety may also be desirable, and in these Box comes in useful, especially as its colour differs widely from any of the three plants previously described, and it bears cutting-in well. Box adapts itself to almost any situation; but the more shaded it is the deeper the green it presents. The varieties of Box differ considerably in their growth. The dwarfest edging Box grows very slowly indeed; I have some that was planted out in nursery rows on ground of fair quality, and which has not much exceeded the height of an ordinary edging in five years, although it has never been cut all that time, and was not very small when planted. On the other hand, some of the varieties of tree Box grow faster than others, and there are some intermediate varieties.

In general, Box thrives best where lime, either as chalk or in some other form predominates; but ordinary good garden soil answers very well. It transplants well, but always prefers an improved soil at each change, otherwise the progress is slow. The ordinary tree Box of British origin makes a better hedge than the *Majorca* species, the latter now and then succumbing to such hard winters as those of 1838, 1845, 1855, 1860, and 1867, although the injury which it sustained in these years was not the same at all places. An old Box hedge that has extended beyond its allotted space may be cropped-in almost to the naked stems of the central upright shoots, and fresh shoots will be produced, provided one side of the hedge be cut at a time, so as always to preserve sufficient foliage to keep the plant healthy. A fresh growth may be secured by this means in two years or so. Unlike most of our indigenous plants, the Box does not reproduce itself to any great extent naturally by seeds, excepting in favoured situations. I believe that on the chalky hills in the neighbourhood of Dorking it is so produced; but in many places where the plant even thrives and does well, the quantity of seed furnished is very small.

LAURUSTINUS.—As an ornamental bank or line, this is well worthy of a place, but it must not be cut so exactly to form as the preceding plants, otherwise the bloom will be destroyed; it likewise requires to be allowed a greater width for growth, and its top ought to be rounded. The *Laurustinus* does best in dry ground, ripening its shoots better, and withstanding the winter better. Very severe winters, however, injure it, such as that of 1866-67, when so many plants were killed in various places; even here some were much injured, while others were scarcely in the least affected, and ripened their summer growth and commenced flowering in August. This plant, however, is more tender than most of those previously named, and is not so well adapted for the formal trimmed hedge; but for a screen to hide unsightly objects it is excellent, and its flowers are at all times interesting, more especially

when they are produced in a mild winter, giving cheerfulness at a time when flowers, excepting under glass, are few and far between.

COMMON LAUREL.—This is a sturdier plant than the last, being seldom injured by snow or frosts in the south of England, although it was so very much last year; it will also bear cutting to any shape. It ought not to be cut with the shears, although this is often done; but the knife makes better work, not severing the large leaves like the shears. It grows rather fast, and is not particular as to ground, although the better that is the faster it grows. Usually dry stony ground, with a subsoil favourable to roots descending a good depth, is the best for the common Laurel.

The best time, perhaps, for cutting a Laurel hedge or bank is the end of July, after which a small amount of growth takes place, which affords additional foliage to the hedge for the winter. The shoots thus produced, being mostly about 3 inches long, if the ground is dry will ripen to their tops and look as perfect as if cut to the size; but if any of undue length appear they may be cut out with the knife in the autumn. The hedge or bank will consequently look well all the winter and spring, up to the time when growth takes place again early in the summer. For some years I have managed some Laurel banks here in this way, and find that from the middle to the end of July is the best time for cutting them. Of course some attention is paid to the character of the season, but in general the above is the best time. If the Laurels are cut earlier the aftergrowth is more than is wanted; while, if cut later, there is not sufficient aftergrowth to clothe the cut portion of the hedge, which will consequently appear raw and naked. It is scarcely necessary to remark that a wet autumn, and possibly a wet situation, will prevent these autumn shoots ripening well; but as a rule they do so when the soil is dry, and when the plants upon it exhaust all its moisture, as is usually the case with the Laurel. It grows faster than the *Laurustinus*, and is capable of being formed into any shape; but when a steep bank has to be covered, alternate slopes and perpendiculars look best.—J. ROBSON.

(To be continued.)

DISA GRANDIFLORA CULTURE.

A STATEMENT copied from a French contemporary relative to this beautiful Orchid induces me to say a few words about it, for it is a marvel to me that it is not more generally cultivated, as there is nothing more beautiful than it is when well grown, and there is no plant more easily managed; and yet, strange to say, one very rarely sees it, and even when seen it is not in the flourishing condition it ought to be. I have had now some years' experience in growing it, and as my plants are the admiration of all my neighbours, I may be allowed to speak from experience.

The statement to which I allude was that the writer had succeeded in making it produce three or four blooms, and had induced the same plant to flower three or four times. I wrote a few lines about it; but even with the Editor's remarks thereon I cannot see what the Frenchman did or did not do. As to producing three or four flowers, I have had it with six; and I believe Mr. Leach, of Clapham Park, who first taught us the way to grow it, and who gave me my plants, has had eight or nine. But what the meaning of the second feat is I do not know. The habit of the plant is peculiar. It throws up one stout shoot; the shoot gradually develops itself into a flowering shoot, while at the same time the young shoot which is to form next year's plant appears alongside of it. This stem having flowered, gradually begins to rot away, and at last comes off from the plant just below the surface, and the next year's shoot takes its place. Now, if the Frenchman says he made this flowering stem produce flowers four or five times, I simply do not believe him; if he means that the same plant flowers again next year, I do not see that there is much in that, for it might go on in this way indefinitely. My short note brought me one from Mr. Leach, who says the "Frenchman does not seem to have done any great wonders."

As to soil, I have used a mixture of peat and cocoa-nut fibre and sand. Mr. Leach uses peat, and says, "I am somewhat astonished at your continuing to use cocoa-nut fibre. I have never ventured to try it with *Disa*. With other Orchids I used it for a time freely, but after six or eight months I was glad to take the plants out of it and fall back on the peat and sphagnum." This has not been my experience this year. I have one large Italian pan in which there are three or four

good-sized plants, and I have not disturbed it this year at all, but merely took off the surface to the depth of an inch or more, and top-dressed with the same compost. Nothing can be doing better. The pan is filled with offsets, and the flowering stems for this year are fully an inch in diameter, so that I expect each of them to bear at least six or seven blooms. I seeded one plant in the autumn of 1866, and in consequence I believe nearly lost it. I, however, divided it, did not allow it to develop its flowers last year, and now it seems to be thriving as well as the others. I never induced any of the seed to grow; but Mr. Leach informs me that he has a few little seedlings "large enough to be seen without spectacles," the produce of seed sown in 1866, and that he has another pot with a multitude of plants in it from seed of last November or October, as yet so diminutive as almost to require a microscope to see them. He adds that there is no difficulty in raising them, and hence *Disa grandiflora* ought to be in everybody's possession. D., Deal.

CENTAUREA CANDIDISSIMA PROPAGATION.

As my method of propagating the above plant differs materially from those of your correspondents in your last week's issue, I send an account of it for publication, hoping they will give it a fair trial, and I have no doubt of a satisfactory result. In the month of August I select a sunny, yet sheltered spot, under a wall or a similar place, and take out the soil 9 inches deep and 18 inches in width, level the bottom, and put in 6 inches of drainage with the same care as if for a valuable stove plant. On this I place an inch of leaf mould, then a mixture of loam, leaf mould, and coarse white sand in equal proportions, all sifted; in this I place the cuttings.

Now, if the *Centaurea* has had favourable treatment in the flower garden, it will be very much increased in bulk by the third week in August, and each plant will afford two cuttings, some three or four, without damaging its appearance if selected carefully. Cut them off with a sharp knife, regardless of a heel to them, for I find this is not necessary. Take off a portion of their leaves, say four out of twelve, and prick the cuttings in the soil previously prepared for them, 3 inches apart each way. Let them have the benefit of the sun and dewy nights, but protect from heavy showers and frosts if they occur. By the middle of October the major part will be rooted; those that are not so will be callused, and may be treated as the rooted plants without much loss.

In taking them up great care is necessary. I dig a trench close to the first row, and by a little contriving the cuttings are undermined and taken out carefully, when the roots will be found clinging to the leaf mould. They are then potted in a similar soil to that in which they were struck, but a little coarser, and plunged in a half-spent dung bed in any porous material, where they must have air night and day, regulated according to the weather, but on no account must they be shut up closely. I find this plant will not do without air at all times.

The old plants when taken up may be treated similarly, or they will do if plunged in coal ashes, but not so well as with a little dryish heat.

When established all may be placed on a front stage in any house where they can have abundance of sunshine and plenty of dry cool air.

In January I select a number of the strongest plants and place them in heat, such as a vinery at work. When they show signs of growth, which will be in a fortnight, the strongest side shoots are taken off as far away from the stem as possible; the advantage of this will be seen hereafter. Prepare them similarly to the August cuttings, and let each have a 72-pot to itself; plunge them in bottom heat and they will soon strike. In three weeks there will be numerous shoots sprouting out from the stems where the first cuttings were taken off. When these have about five leaves pull them off, and place about nine in a 5-inch pot. Treat as advised for the others until established, when they should be hardened-off by degrees.

It will be seen that by my method the cultivator has two chances of propagation; but I have always found spring to be the best time, as I obtain three crops of cuttings, and the autumn affords only one. Besides, I have found that to cut the plants up into cuttings in autumn is to run the risk of losing the lot, for the old plants are likely to die through being mutilated so near the winter.

Has any correspondent seen disease in this plant when planted in masses of two or three hundred? It has occurred

here, but never when the plants were in single or double rows, and I have attributed it to the want of a circulation of air to dry the foliage after rain. Disease has always made its appearance when the plants are thickly together, and it is always in the centre of the mass.—THOMAS RECOR, *Hawkhurst, Kent*.

SOWING ORCHID SEED.

You were so kind as to answer my inquiry respecting the seed pods on the *Odontoglossum grande*. The pod, which was the size of a hen's egg, and has remained on the plant for two years, broke open this morning (March 10th), and has shed a large quantity of cream-coloured seed, not unlike Poppy seed. The question now is, How is it to be sown? My gardener thinks it ought to be sown on chopped sphagnum and turfy peat, and covered with glass in the stove or propagating pit.

As the plant was standing between *Laelias* that were in splendid bloom at the same time, my man took a little of the pollen from *L. superba* with a camel's-hair brush, and impregnated the bloom of the *Odontoglossum*; this he thinks has caused it to seed.—H. M.

[The best reply we can offer to this inquiry is in the following extract from Williams's "Orchid-Grower's Manual":—

"The best place to sow is on the top of an Orchid pot, where the seeds will not get disturbed; let the peat be in a rough state; do not cover the seed, but give a little water with a fine-rosed pot, just to settle it in the peat; some rough blocks of wood on which another plant is growing afford a capital situation to grow upon; they should always be kept a little moist; and of such as are sown on pots in the same way, when the plants are strong enough, pot them off into separate pots, or place on blocks in material already recommended; in potting and taking them up, care must be taken not to break the roots; by hybridising the finer kinds you are most certain to get fine flowers. Of *Cattleyas* we have only one which is not worth growing, and that is *C. Forbesii*, yet that is better than many other Orchids in cultivation; therefore, let many begin to raise hybrids, not only with the view of obtaining finer flowers than we already possess—though that would be a real acquisition—but for the additional purpose of raising sorts that might succeed in cooler houses. *Odontoglossum grande* and many others, for instance, do better in a cool house than in a warm one. *Cypripedium insignis* will also thrive well in a greenhouse. If, therefore, we could cross this with some of the other kinds, such as *C. grandiflorum*, *C. hirsutissimum*, *C. Lowii*, or *C. barbatum* superbum, something good might be the result. There is also our hardy *Cypripedium spectabile*, which might be induced to play an important part in the operation. *Phajus grandifolius* and *Wallichii* are likewise two noble plants for winter decoration which do well in a warm greenhouse. Might not these be crossed with *albus* and *Bensonii*, the one being white, and the other lilac, and something new be realised, provided they could be had in flower at the same time? I am glad to be able to state that we have numerous Orchid-growers trying their hand at seedlings, and many of them have succeeded in raising some, and I hope to see something startling in that way before long. Moreover, *Lycaste* will do in a cool house, as, for instance, *L. Skinneri*, which is one of the finest."

CULTURE OF STOCKS.

HAVING been very successful in the raising of Stocks, I offer a few hints on the system I adopt.

I use rich friable soil, such as would grow a *Pelargonium* well, keeping the finer portion for the top. I then sow the seeds and cover slightly with the same compost, after which I give a good watering through a fine rose, and place the boxes in a vinery at work. I keep the soil always moist, and when syringing or bedewing the vinery they have their share.

After the seedlings have made their second pair of rough leaves I prick them out into other boxes, doing all the work in the vinery where they have been growing. I consider that it is by keeping them always moist that I am so successful, not losing one plant in the hundred. Gardeners err in keeping Stocks too dry.—G. Mc D., *Balclutha, Greenock*.

MY ORCHARD-HOUSE JOURNAL.

March 15th.—Dry, bright, and sunny, doors and ventilators all open; Peaches and Nectarines nearly in full bloom. The house is full of bees, yet there are no hives within half a mile, and but very few in the neighbourhood; they quickly load their thighs with pollen, and when they depart for home they seem much encumbered with their yellow balls. The diversity of blossoms in the different varieties of Peaches and Nectarines is most interesting, yet one seems to wish that all had the

nicely-shaped and brilliant-coloured large flowers of the Orange Nectarines and Grosse Mignonne Peaches, they are so very gay. It was pleasant to sit under the shade of the blossoms of a large standard spreading Peach tree, for there are no leaves, and the lively hum of the bees was so exhilarating that an hour or two passed quickly, the temperature 72°—perfection; and then, while looking at a host of seedling trees, one's eye caught a fine tree with large flowers marked, "From Coolidge's Favourite, crossed with the Stanwick Nectarine." The flowers of the Peach being small, and those of the seedling being large and beautiful, show that the cross has taken effect; in fact, the tree bore some fruit last year, which were noted as "large, delicious, with the true Stanwick flavour." Many other cross-bred seedlings show by their blossoms that the crossing has been effective.

March 16th.—The day cloudy, not a bee to be seen or heard. The early Cherries, such as Belle d'Orleans and Pigarreau Jaboulay, the earliest of the race, in full bloom.—T. R.

NEPETA NEPETOS (NEPETELLA?) AS A BEDDING PLANT.

THIS, like *Viola cornuta*, is an old border plant, but while one has been lauded the other is now never mentioned, yet of the two I think the *Nepeta* the more useful. No other plant of its colour can be used with such advantage in the flower garden. As an herbaceous plant it is pretty and graceful, and as a bedding plant it is equal to any. It will flower from the time of planting-out up to that of its being taken up in the autumn, no matter whether the days be rainy or bright, and when seen from a distance in conjunction with yellow *Caleolarias*, *Pelargoniums*, &c., it has a very pleasing effect, its habit being so different.

It is easy of propagation, and as easy to keep over winter, and if more of it were used we should not need to call out so much for a blue flower to come in for a third or a fourth line in our ribbon borders.

It requires a little clipping at the sides in summer to keep it from encroaching on its neighbours; but that is not more than the pinching and other attention required by a great many of our bedding plants.

Its treatment here is to strike cuttings in autumn in pans, keeping it over winter in any place from which frost is just excluded. It is potted early in the spring, placed in heat for a few days to root it quickly; is then hardened-off a little, placed out of doors, and finally planted about the middle of May.

So treated it is a most effective bedding plant, and of a colour greatly needed.—J. W. K.

THE MISTLETOE IN FRANCE.

I MUCH regret that owing to some unaccountable delay in the transmission abroad of some of the numbers of THE JOURNAL OF HORTICULTURE, I have only just been made aware of the inquiry which Mr. Robson had addressed to me on the 30th of January last. I lose no time in replying to it.

The Mistletoe is not found on the Oak in this part of France—in fact, it would be difficult for it to find a twig to grow upon, owing to the practice of cutting off all the branches of the trees for firewood.

The Poplars mentioned by M. Edouard André, which grow abundantly on the sides of the canals and rivers, and the cider Apple trees, are those it affects in the localities I have previously mentioned. It flourishes on nearly all the latter, young and old, healthy and unhealthy, on ground which has not been moved for years, as well as on that which was ploughed up or dug with the curious Breton spade, as it were but yesterday. The Apples are good of their kind and yield excellent cider, at least the Bretons seem to think so.

I cannot agree with M. Edouard André, that "everywhere in France this parasite is sought for and destroyed." Its only natural enemies seem to be the English sailors, who, when "Christmas is coming," may be seen with their wonted activity and daring, climbing the tall trees and robbing French orchards of their winter verdure, as, perhaps, in their boyish days they robbed English orchards of their autumn produce, more agreeable to schoolboy appetites. Except for purposes of exportation, I believe the Mistletoe would remain untouched for years.

"When western France shall be so carefully and indus-

triously cultivated as the home counties of England." When—when—will that be? In the depths of the remotest futurity lies the fulfilment of that anticipation. Judging, at least from the present state of agriculture, the hindrances to its advancement, the slow progress made, the friends of the dear old Mistletoe may take courage. If its extinction depend on a high state of cultivation, as it most probably does, many, many years must elapse before in Brittany, at least, it "will be lost to sight, and to memory, alone, dear."—A TRUE BRITON, *St. Malo, Brittany*.

ROYAL HORTICULTURAL SOCIETY.

FIRST SPRING SHOW.—March 14th.

Shows there have been, opening the exhibition season, both earlier and later in the spring than that held in the Conservatory arcades at South Kensington on Saturday last; but though some may have equalled it, many been favoured with finer weather, certainly there has been none to surpass it in the general excellence of the display. Hyacinths, Tulips, Crocuses, and Cyclamens were the principal subjects for which prizes were offered; but Roses, as beautiful and perfect as in the height of summer, along with Camellias, Azaleas, Rhododendrons, and forced shrubs of different kinds, increased the variety and enhanced the interest of the Show. The competition even, where the competitors were not numerous, was severe, and it was most pleasing to remark the greater number of exhibitors, and the improvement in the amateurs' classes. This alone would lead to the conclusion that the cultivation of spring-flowering bulbs is advancing, did not every window, every villa garden near London, bear evidence of the fact by the Hyacinths, the Tulips, and the Crocuses which are there displayed by the owner, and which afford quite as much gratification to the general public as to himself. On the road to London one gradually comes to take an interest in the window plants and gardens by the way, to note the success here, the failure there; the attention to the wants of the plant in the one case, the absence of it in the other; and to distinguish the real lover of gardening from those who keep plants merely from a feeling of ostentation.

Class 1 was for eighteen Hyacinths, and in this the competition for the first place lay as usual between Messrs. Cuthush, of Highgate, and Mr. William Paul, of Waltham Cross; both collections, it is scarcely necessary to remark, being of the highest excellence. Last year Mr. W. Paul took a long stride to the front, exhibiting spikes such as have never, we believe, been equalled, and which were as nearly perfection as could be conceived; but this year the opponents with whom he has had so many severe struggles proved victorious in a well-fought field, though in neither collection did we think the spikes so remarkable as last year. Messrs. Cuthush, whose spikes were most excellent, had of Blues, Marie, Baron Von Tuyl, Argus, and Grand Lilas; General Havelock, blackish purple with a metallic lustre; Haydn, a very fine mauve; of Reds, Von Schiller, Macanlay, Mrs. Beecher Stowe, Le Prophete, Florence Nightingale, Emmeline; Blush, Duke of Wellington, double, Gigantea, and Grandeur à Merveille; White, Snowball, Mont Blanc, and Mirandoline. Mr. W. Paul's eighteen was as follows:—Blues, Garrick, double; Charles Dickens, King of the Blues, Argus, and Lord Palmerston, purplish lilac with a white eye, and very effective; of the nearly black kinds, Fernck Khan and General Havelock; Reds, Garibaldi, brilliant dark crimson, Solfaterre, Von Schiller, Koh-i-Noor, Princess Helena, soft rose, Florence Nightingale; Blush, Gigantea, Seraphine, and Grandeur à Merveille; Snowball, white; and Ida, yellow. Mr. Cuthush, of Barnet, who was third, had very good examples of Charles Dickens, Fernck Khan, Duc de Malakoff, buff, Leonidas, Grand Lilas, Argus, and Marie.

In Class 2, for twelve Hyacinths of six kinds, the same three exhibitors competed as in Class 1, and took the same relative positions in the prize list. Messrs. Cuthush had very equally grown pairs of Baron Von Tuyl, Grand Lilas, General Havelock, Von Schiller, Macanlay, and Mont Blanc; and Mr. W. Paul had Garibaldi, Princess Mary of Cambridge, very pale blue, Snowball, Florence Nightingale, Koh-i-Noor, and Mont Blanc. These were also very fine examples of cultivation, and were arranged with great care to show a variety of colour. In the collection from Mr. Cuthush, of Barnet, the most noticeable were Haydn, Grand Lilas, and Mont Blanc. Mr. Macintosh, of Hammersmith, sent among others Victoria Alexandrina, bright red, very fine in colour, though the bells were small.

Class 3 was for six kinds, and for amateurs only. Here the first prize went to Mr. Steel, of Hammersmith, who had well-grown examples of Grandeur à Merveille, Charles Dickens, Robert Steiger, Grand Lilas, Gigantea, and Mont Blanc. Mr. Bartlett, also of Hammersmith, was second with a good six, consisting of Elfrida, Charles Dickens, Sultan's Favorite, Grand Lilas, Gigantea, and Queen of the Netherlands, white. Mr. Wilding, 2, Chesterfield Street, Enston Road, was third. Mr. Wiggins, gardener to W. Beck, Esq., of Isleworth, and Mr. James, North Road, Highgate, also sent good collections; and others came from Mr. Beech, gardener to C. J. Herries, Esq., Sevenoaks; Mr. Young, Mr. Hooker, Brompton; Mr. Burden, Mile End Road, Bow; and Mr. Higgs, gardener to Mrs. Barchard, Putney Heath.

Class 4 was for six kinds grown in pots in windows. Mr. James

was first with good examples of Garrick, Charles Dickens, Von Schiller, Macaulay, Mont Blanc, and Gigantea; Mr. Bartlett second, and Mr. Wilding and Mrs. R. Young, equal third. Mr. Steel, Mr. Turner, Portland Road, Notting Hill; Mr. Beech, Mr. Wiggins, and Mr. Barden were the other exhibitors.

Class 5 was for six Hyacinths, new kinds never before exhibited. The first prize in this was taken by Mr. W. Paul with *Clio*, bearing considerable resemblance to Lord Palmerston in colour, but with larger bells and broader in the segments; *Eclipse*, crimson, edged with rose, brighter in colour than Von Schiller; King of the Yellows, a great advance in its class, having a finely-formed compact spike, deeper in colour than *Ida*; Grand Monarch and Byron, in the style of Grand Lilas, with fine spikes and bells, and broad in the segments; and *Autocrat*, very dark purplish violet, fine spike. Messrs. Cutbush were second with *Vnlean*, almost black, loose spike; *Bijou Celeste*, white, good substance, broad segments; *Prince Alfred*, compact spike, good bells, glowing magenta crimson, shading off towards the edges; *Luna*, pale yellow; Von Siebold, dark blue, an improvement on Baron Von Tuyl in colour and form; and *Jesebo*, with a broad plum-coloured stripe along each segment, and a paler edge on each side.

In the next class, that for new kinds introduced since 1865, Mr. W. Paul was again first with *La Grandesse*, with a robust spike, white; *La Grande Ressemblance*, broad pale lilac bells tinged with blush; *Sir H. Havelock*; *Delicata*, double, pale blue, somewhat loose; *Mirandolin*, compact spike, small bells, rose striped with carmine, and having an orange tinge; and *L'Esperance*, dark blue with a purplish shade, fine. Messrs. Cutbush were second with *Goldfish*, yellow; *Prince Albert*, double, dark blue, close spike for a double variety; *Johnson*, good spike, purplish violet, with a light throat; *Arnold Prinsen*, much the same in colour as *Sir H. Havelock*; *La Mignonne*, double white; and *Sadowa*, with a dense spike of soft rose-coloured bells. In addition to his other fine exhibitions, Mr. W. Paul had in the miscellaneous class, a fine collection of about 120 pots of Hyacinths, and Mr. Bartlett one of eighty or ninety pots, in which were many excellent spikes.

Narcissi came next in the schedule. Mr. W. Paul was first with *Newton*, *Bazelman Major*, *Yellow Prince*, *Queen of the Yellows*, *Grand Monarque*, and *Gloriosa*; Messrs. Cutbush second with, among others, *Soleil d'Or*, showy yellow and orange; and *King of the Netherlands*, yellow and white. Mr. Cutbush, of Barnet, was third.

Of Tulips there was a good though not very large display, and with the exception of *Proserpine*, feathered and flamed yellow and bronzy rose, from Messrs. Cutbush, there was nothing very different in the varieties from those previously reported. Messrs. Cutbush were first with the above, *Fabiola*, *Proserpine*, *Vander Neer*, *Rubens*, and *Joost Van Vondel*; Mr. W. Paul, second, with *Keizerskroon*, crimson, broadly edged with yellow; *White Pottelbakker*; *Maas*, scarlet; *Proserpine*, *Vermilion Brilliant*, and *Moliere*. Mr. W. Paul also exhibited a splendid collection of Tulips, conspicuous among which were *Tourne-sol*, and *New Yellow Tourne-sol*, *Roi Pepin*, *Grootmeester Van Multha*, *Canary Bird*, and *Mianlus*, red and yellow. Mr. W. Cutbush, of Barnet, was third. In the amateurs' class, Mr. Steel was first; Mr. Bartlett, second.

Crocuses were unusually large and fine, both in the nurserymen's and the amateurs' classes. In the former Mr. W. Paul took the first prize; Messrs. Cutbush the second; and in the latter Mr. Bartlett and Mr. Steel held the same relative positions. The following varieties were very fine:—*White*: *Mammoth*, *Caroline Chisholm*, *Queen Victoria*, *Princess of Wales*. *Yellow*: *Golden Yellow*. *Purple* and *Blue*: *David Rizzio*, *Brunel*, *Perfection*, *Ne Plus Ultra*, *Prince Albert*, and *Lord Byron*. *Striped*: *Ida Pfeiffer*, *Princess Alexandra*, *Albion*, *Sir W. Scott*, and *La Majestense*.

Of Forced Shrubs only a few were shown, consisting of *Rhododendrons*, *Ghent* and other *Azaleas*, *Dentzia gracilis*, *Weigela rosea*, *Persian Lilac*, and one or two others. Mr. Willie, Oak Lodge, Kensington, was first; Mr. Earley, gardener to F. Pryor, Esq., Digs-well, second; and Mr. Steel, third.

Of Lily of the Valley, Mr. Howard, gardener to J. Brand, Esq., Balham, exhibited half a dozen potsful in beautiful condition, taking the first prize. Mr. W. Cutbush was second, with smaller potsful full of flower; and J. Brand, Esq., Balham, third. Mr. Salter, of Hammersmith, had the variety with beautifully striped leaves which is so ornamental, but it was not in full bloom. Good potsful of the ordinary kind were also shown by several other exhibitors.

In Cyclamens, Mr. Wiggins, gardener to W. Beck, Esq., made a most beautiful display with a collection of about 150 pots, and although the plants were not more than from sixteen to eighteen months old, some of the pots had not less than 140 or 150 blooms, and in one pot as many as two hundred had been counted, but in this case the corals were older. Mr. Wiggins well deserved the first prize which he obtained; the second went to Mr. Todman for a small collection of much smaller specimens.

Chinese Primulas of an excellent strain were shown in fine bloom both by Messrs. Dobson, of Isleworth, and Mr. Wiggins, who were first and second, and by Mr. Todman, who was third; also by Mr. Macintosh, of Hammersmith.

To the beautiful collection of Roses, from Messrs. Paul & Son, allusion has already been made. Among them were specimens in fine bloom of *Princess Mary of Cambridge*, *Alba Rosea*, *Gloire de Dijon*, *Madame Victor Verdier*, *Camille Bernardin*, *Madame Julie Daran*,

Lord Raglan, *Victor Verdier*, *Alfred Colomb*, *Marie Rady*, and *Manrice Bernardin*; but more remarkable even than the plants was the stand of a dozen cut blooms of *Marchal Niel*, some of which were upwards of 4 inches across, and all of them of the richest golden yellow. Not less beautiful was the companion stand of *Alba Rosea*, cream white with a delicate rose-coloured centre. In other boxes from the same firm were fine blooms of *John Hopper*, *Madame Victor Verdier*, *Virginal*, white and delicate pink, very pretty; *Xavier Olibo*, and others, and fine buds of *Madame Falcot*. Messrs. Lane, of Great Berkhamstead, likewise sent a numerous collection, mostly in small pots.

Foremost among miscellaneous subjects were the Camellias, of which Mr. W. Paul sent a numerous collection in small pots, and some, though in pots only 4½ inches in diameter, had four good-sized blooms. *Jubilee* was particularly fine. He also sent a very large specimen of *Donckelaari* in fine bloom, and a plant of *Eximia* of less size. Boxes of cut blooms were also shown by Messrs. Lee, of Hammersmith; Mr. Howard, of Balham; and Mr. Trussler, gardener to D. J. Kay, Esq., of Hoddesdon, who had *Donckelaari* very large and beautifully blotched and spotted with white. Mr. H. M. Kettlewell, Potter's Bar, contributed forced *Pelargoniums*, among which were *Belle Blanche*, a useful light variety, and *Monte Christo*; Mr. Laing, gardener to P. W. Flower, Esq., Tooting, tree *Mignonette*, about 5 feet high, with neat pyramidal tops; and Mr. W. Cutbush, Barnet, tree *Mignonette* trained on wire. Mr. Wilkie had a collection consisting of *Dracanas*, *Camellias*, *Epacris*, *Azaleas*, including two well-bloomed standards of *Iveryana* and *Criterion*, and *Hoteia japonica*, which has been frequently noticed as a very ornamental plant for spring decoration. Mr. Bull contributed *Bertelonias*, a fruiting *Aucuba*, *Camellias*, *Tricolor Pelargoniums*, *Cerasus Sieboldi rosea*, plena with large semi-double rosy lilac flowers, and *Glossodia major*, a terrestrial Orchid from Australia, having a purplish violet flower on the summit of a slender grass-like stem. Messrs. Lee had *Cyrtocentrum maculatum*, an old free-flowering winter Orchid, and *Odontoglossum Alexandrie*; and Mr. Burnett, gardener to W. Terry, Esq., Fulham, *Cologyne cristata* and *Dendrobium chrysotoxum*. *Neapolitan Violets*, very well grown and flowered, came from Mr. Roberts, Holmwood, Kent; and Mr. T. Ware, Hale Farm Nurseries, Tottenham, sent baskets of Alpine and spring-flowering plants. Mr. Earley showed two boxes of cut flowers, among which were *Acacias*, *Lilacs*, *Cinerarias*, *Azaleas*, *Thunbergia Harrisii*, and the lacework-like flower of, we believe, a *Snake Cucumber*, which would be lovely for bouquets, though not quite agreeably scented. Messrs. F. & A. Smith, of Dulwich, sent a collection of their fine new Variegated Zonal *Pelargoniums*, and Mr. Watson, of St. Alban's, baskets of *Miss Watson* and *Mrs. Dix*, two fine varieties, which he has frequently exhibited, together with a plant of *Annie Merry*, a promising sort with a well defined margin. Messrs. Paul & Son furnished a variety of *Dentzia crenata*, with pale green leaves prettily marbled with white, and *Dentzia gracilis variegata alba*, with the leaves variegated with yellowish white. Mr. Neale, gardener to P. A. Cartwright, Esq., exhibited a remarkably fine Smooth-leaved *Cayenne Pine Apple*, and Messrs. Lane an orchard-house *Plum tree*, which was between 4 and 5 feet high, and a mass of blossoms. For the above-named subjects several extra prizes were awarded, which will be found in the official prize list, published in another column.

Despite the unfavourable weather, there was a good attendance of visitors, among whom were their Royal Highnesses the Dukes of Cambridge and the Princess of Teck. We may also here call attention to the fact that the conservatory has at present a very gay appearance, the Camellias and several *Rhododendrons* being in fine bloom. Among the latter, *Rhododendron arboreum* is magnificent, and *R. nilagiricum* is covered with soft rose-coloured flowers.

FORTNIGHTLY MEETING.—March 17th.

FRUIT COMMITTEE.—G. F. Wilson, F.R.S., in the chair. On this occasion there was an unusually fine display of fruit, all of which was in admirable condition. Prizes were offered of 15s. and 10s. for the best and second best three dishes of dessert Apples. Mr. Tillery, of Welbeck, sent Cox's Orange Pippin, Rosemary Russet, and Mannington's Pearmain. Mr. Beach, St. Julien's, Sevenoaks, sent Blenheim Pippin, Winter Pearmain, or Duck's Bill of Sussex, and Ribston Pippin. Mr. Parsons, gardener to R. Attenborough, Esq., Acton Green, sent Braddick's Nonpareil, King of the Pippins, and Ribston Pippin. Mr. Cox, of Redleaf, sent Golden Harvey, Court of Wick, and Sam Young. Mr. Sidney Ford, of Leonardlee, Horsham, sent Ribston Pippin, Red Pearmain, and a variety erroneously called Scarlet Pearmain. He also sent a second collection, one dish of which was past and unfit for table, and was therefore disqualified. Mr. Whiting, of The Deepdene, sent Nickleham Pearmain, Cox's Orange Pearmain of delicious flavour, and Adam's Pearmain. Mr. Lynn, gardener to Lord Boston, sent Golden Knob, Sturmer Pippin, and Ribston Pippin. Mr. Dixon, gardener to Lady Holland, Holland House, sent Pile's Russet, misnamed Sam Young, Clunter Golden Pippin, and Royal Russet. Mr. Spivey, gardener, Hallingbury Place, Bishop Stortford, Greave's Pippin, Ribston Pippin, Cox's Golden Drop. On a very minute examination of all the dishes, it was decided that Mr. Whiting's collection was first, and Mr. Cox's second, and both were very fine samples in flavour, colour, and condition. In the competition for the best three dishes of kitchen Apples, Mr. Whiting sent Duncelov's

Seedling, Minchall Crab, and Alfriston. Mr. Cox, of Redleaf, sent Formosa Pippin, Dumelow's Seedling, and Scarlet Winter Pearmain, or Duck's Bill. Mr. Sidney Ford sent Sir William Gibbons, Royal Russet, and Norfolk Beefing. He also sent Flower of Kent, Wadhurst Pippin, and Beauty of Kent, misnamed Flower of Kent. Mr. Parsons, of Lyons, Sevenoaks, sent Hollandbury, Dumelow's Seedling, and Alfriston. Mr. Dixon sent Dumelow's Seedling, Yorkshire Greening, and Catshead. Mr. Lynn sent Dumelow's Seedling, Kentish Fillbasket, and French Crab. Mr. Spivey, of Hallingbury Place, sent Wadhurst Pippin, Kentish Fillbasket, and New Hawthornden. The first prize was awarded to Mr. Lynn, and the second to Mr. Whiting.

There was also a prize offered for the best dish of early Grapes. There was but one exhibition sent by Mr. Johnson, gardener to the Marquis of Aylesbury, Savernake Forest, and as they were very excellent and of good flavour, the first prize was awarded it. Mr. Whittaker, gardener to Lord Crewe, sent a bunch of Lady Downe's Grape which had been preserved by placing it in water containing charcoal, from which the air is excluded by sealing the cork. The bunch was somewhat shrivelled, and the flavour of the berries was watery, evidently caused by the absorption of the water in which the stalk was immersed, thereby diluting the saccharine juice stored up by the fruit. Mr. D. McKellar, of Colworth Gardens, Sharnbrook, Bedfordshire, sent a sample of Marguerite Strawberries, grown under the influence of Standen's manure, which were very fine specimens. Mr. S. Ford sent a fine collection of Apples, consisting of upwards of fifty dishes, and was awarded a special certificate. He likewise sent a dish of Uvedale's St. Germain Pear, under the name of Catillac, and one of Oranges. Mr. John Cadger, Luton Hoo Park, exhibited a Mushroom upwards of 7 inches in diameter, and which when gathered weighed 14 ozs. Though of large size, much larger specimens than this have been recorded. Mr. Dixon, gardener to Lady Holland, Holland House, exhibited two dishes of Mushrooms, seemingly excellent, but affected by a parasitic fungus.

FLORAL COMMITTEE.—Another very excellent exhibition of plants and flowers took place this day, and several certificates were awarded. Mr. Davies, Ormskirk, sent a neat dwarf-habited *Rhododendron* called *multiflorum*, with white flowers, a seedling from *R. virgatum*, and a second-class certificate was awarded it. Messrs. E. G. Henderson sent a basket of small plants of *Laminium maculatum aureum*, but they were too young for its merits to be decided upon; also a new *Cyperus*, *Lacouri*, a dwarf plant of very neat appearance—it received a second-class certificate. Messrs. Paul & Son, Cheshunt, exhibited an unusually fine collection of pot Roses in full flower. Rarely are such Roses seen at this early season. A special certificate was given them. From the same firm came three boxes of cut Roses, which were most lovely. There were several fine specimens of that gorgeous yellow Rose *Maréchal Niel*; a special certificate was awarded for them. Messrs. Veitch, who contributed largely to the show, had a very fine collection of Orchids, among them *Dendrobium crepidatum*, *Oncidium macranthum hastiferum*, and an extraordinarily fine specimen of *Cymbidium eburneum*, for which a special certificate was awarded. A special certificate was also given for the collection of Orchids. There were also some very nice plants of *Camellias* and *Azaleas*. A special certificate was awarded for the collection.

Mr. W. Paul sent small plants of *Deutzia gracilis variegata* and *Deutzia crenata marmorata*. Messrs. Smith, Dulwich, exhibited a collection of Variegated Zonal *Pelargoniums* of great merit. Among them were specimens of Sir J. Paxton, L'Empereur, Glory of Dulwich, Sultan, Marvellous, and Sunray. These were of the highly coloured Zonal section. Golden Circle, Gladiator, and Sybil, three of the Bronze Zonals, with a yellow ground, were extremely fine. A special certificate was awarded the collection. Mr. E. S. Williams sent a fine collection of Orchids. Among them an *Oncidium*, probably a variety of *O. obryzatum*, was awarded a second-class certificate. A special certificate was awarded for the collection of Orchids. Mr. Williams also sent a collection of *Cinerarias* and *Lilies* of the Valley, *Azalea Princess Helena*, and *Azalea Souvenir de Leon Mienhaut*.

Mr. W. Paul sent several new Hyacinths, which, although not producing such large spikes as usual, were of great merit. The following received first-class certificates:—King of the Yellows, Antocrat, very dark blue; Grand Monarch, pale silvery blue with shaded stripes; Clio, something of the same colour; Couronne des Bleus, pale delicate grey. J. Stone, gardener to J. Day, Esq., exhibited a fine specimen of *Oncidium Kramerianum*, resembling *O. papilio*. A first-class certificate was awarded it. Messrs. Osborn, Fulham, sent a very interesting collection of hardy spring flowers, consisting of *Scillas*, *Primulas*, *Ericas*, &c. A special certificate was awarded. Mr. Bragg, Slough, exhibited a large collection of Pansies, which were awarded a special certificate. W. Wilson Saunders, Esq., exhibited three or four Orchids, distinguished by their form or colour of flowers; one being *Zygopetalum crinitum*, of two varieties growing in the same pot, probably seedlings, one a remarkably fine flower with dark purple lip.

GENERAL MEETING.—W. Wilson Saunders, Esq., F.R.S., in the chair. After the election of thirteen new Fellows, and the announcement of several donations of plants and seeds, for which a vote of thanks was passed, the Chairmen of the Fruit and Floral Committees reported the awards of these bodies.

The Rev. Mr. Berkeley then said that on the last occasion he had directed attention to *Oncidium macranthum hastiferum*, of which at

the present meeting there was a specimen with eleven flowers from Messrs. Veitch, and one with five flowers came from Mr. Richards, Lord Lonsborough's gardener. Since the last meeting, Mr. Berkeley continued, he had been to Kew and examined Dr. Lindley's herbarium, in which he found several specimens of *macranthum*, which had been met with by a number of travellers in Peru, but none of *hastiferum*, though there was a pen-and-ink sketch of it by Reichenbach. He therefore could not say whether it was a distinct species or not. An unnamed *Oncidium*, shown by Mr. Williams, of Holloway, was then stated to be a mere variety of *Oncidium obryzatum*, which was also shown by the same exhibitor. *Zygopetalum crinitum*, exhibited by Mr. Wilson Saunders, was next referred to, as exhibiting two extremely distinct varieties in the same mass, one being much more handsome than the other. Whether this difference was the result of a sport, or arose from there being two distinct roots, he did not know. Mr. Berkeley then held up a spike of *Dendrobium*, of which the flowers were double; the divisions of the corolla were doubled, there were two columns, and two lips. This result he ascribed to lateral fusion. He next called attention to a matter of considerable importance in regard to two remarkable specimens of Mushrooms shown, and of which the gills were paler than he had ever seen before—a circumstance some might think was due to their having been grown in the dark and not developing their spores; but on close examination he had found that the gills were being gradually obliterated by a parasitic fungus. It became questionable, therefore, whether Mushrooms in this state were wholesome. For his own part he should not like to eat them, for, even if they were so, they had not that fine aroma which good Mushrooms ought to possess. No doubt the gentleman who sent the Mushrooms in question was not aware of their being in a diseased state; and when we hear, as we occasionally do, of deplorable cases of poisoning by Mushrooms, possibly such disasters may not be caused by the Mushrooms, but by the fungi with which they are attacked. With regard to the Grapes preserved by placing the stalk in water, it had been justly remarked that they were certainly not improved in quality. In the ordinary way of keeping, Grapes become something like raisins; but in this mode water was absorbed to the detriment of the flavour, and even with the addition of charcoal the water might get into a putrid state. The method was originally practised at Thomery, but it was universally acknowledged not to be a success. At the last meeting he had drawn attention to two kinds of decay, one being dry rot, the other a process of slow combustion. He had since been informed by a gentleman that he had specimens of wood which, if the latter process went on, might end in being pure carbon, and which, instead of being brown as with ulmates and humates, had become like anthracite. Mr. Berkeley then exhibited several specimens of wood attacked by fungi, and among others a drawing of one which had attacked teak at Madras, completely obliterating the medullary rays, and he said it frequently happened that these were completely destroyed in such attacks, while the longitudinal cells remained perfect. Wood was often affected by fungi, although there was no trace of their presence superficially. It might be asked of what interest was all this in a horticultural point of view; but he replied that it was of great importance to those about to put up houses. At Lord Fitzwilliam's a large range of houses had been put up with oak wood, which was in what was known as a "foxy" state—no specimen of such wood would be allowed in the dockyards—and the houses soon became very unsound. The reason of much of the wood in Northamptonshire being foxy was, that instead of being produced by trees raised from seed, very often old stools which were generally full of fungus were cut down, and the resulting wood became affected likewise. It was of great importance to ascertain before buildings were put up that the wood to be used was free from the mycelia of fungi. The next subject to which he would call attention was a model sent by C. Wykeham Martin, Esq., M.P., of Leeds Castle, Kent, showing a system of heating which was described by him in the first two parts of the Society's Journal (an account of this was given by Mr. Robson in THE JOURNAL OF HORTICULTURE, Vol. xi., pages 361 and 362). This mode of heating offered the advantages of but a small quantity of fuel being required to heat a large area; almost any kind of fuel might be used—Mr. Martin burnt faggots, and even sawdust; and it was extremely cheap, the expense of constructing the foundations and arrangements for heating a house 15 feet by 10 having been only £17 12s.

The Chairman said that those who were at the last meeting would recollect that a medal—the Lindley medal—was voted to Mr. Marshall for his exhibition of Cattleyas; but as it was a rule that members of the Council could not take such awards, though Mr. Marshall might have the honour of its being presented to him, he could not, in consequence of that rule, accept it. With regard to the *Zygopetalum crinitum*, referred to by Mr. Berkeley as exhibiting two kinds of inflorescence appearing to come from the same source, his impression was that two seeds had been dropped close together and sprung up. Now, if the same pod of seed produced the two conditions of the plant, he wished to know why we do not import seeds of Orchids instead of bulbs. The Cattleyas in Mr. Marshall's collection were all, he believed, the result of the seed of one species under different conditions, and it would be a great gain to horticulture in this country to import seed and raise plants from it, and in doing this he did not know that there would be any difficulty. Another subject taken up by Mr. Berkeley—dry rot—was of vast importance. He (the Chairman) had seen large portions of ships entirely destroyed by dry rot. Hundreds of thousands

of pounds were thus at stake, and many lives. With reference to teak, it was one of the most durable and finest of woods for ship-building, and how was it that dry rot attacked it? He believed that a great deal lay in the teak wood, when cut, not being properly seasoned and full of essential oil; but how dry rot could penetrate into the pores we did not know. We know that when a lot of timber is put together in an unseasoned state dry rot is sure to follow, and now in ship-building large air holes are left to prevent it; but so long as there is any dampness in timber, so long is there a tendency to dry rot.

Mr. Berkeley remarked that if any structure was made of unseasoned timber and painted when full of sap, it was sure to be attacked with dry rot. He would just add that *Dendrobium Bullerianum* is the same as *D. gratiosissimum*, which was published in *Botanische Zeitung* in 1855.

CARTER'S ASH-TOP FLUKE POTATO.

WE observe your correspondent, "D.s," remarks (page 182), respecting the above Potato, and have no doubt some of the many of our customers who have given it a trial will fully endorse the high character we have given it. We continue to receive the most encouraging reports of its excellence, whilst the rapidly increasing demand, notwithstanding the price being the same as last season, is to us the most substantial proof of its merits. Judging from your correspondent's general report, we should be inclined to surmise that his trial must have been under circumstances particularly unfavourable for Potato crops, as old kinds of established repute are condemned in common with the Ash-top Flake.—JAMES CARTER & CO.

NEW BOOKS.

A History of Variegated Zonal Pelargoniums, with Practical Hints for their Production, Propagation, and Cultivation.
By PETER GRIEVE.

THIS little volume contains all that is known about its subject, and as its author has been engaged in raising Variegated Pelargoniums ever since 1848, when Mr. Kinghorn produced *Flower of the Day*, he is entitled to the place of a first authority. He says—

"It was in 1853 or 1854, that my attention was first directed to this subject. By fertilising blooms of *Flower of the Day* with pollen taken from the well-known *Tom Thumb*, I succeeded in raising a variety which was named *Culford Beauty*. This was succeeded by several sorts of more or less merit, conspicuous amongst which was one called *Rainbow*, which proved the most vigorous, and possibly the best of the silver-variegated Zonals that had up to that time been introduced. This sort, however, fine as it was, was at last superseded by the more beautiful variety known as *Italia Unita*, which, up to the present time, is, perhaps, not surpassed by any other silver-edged variety.

"To return to the variety named *Rainbow*, this variety was of a somewhat remarkable origin. One of my seedlings of that period was produced by an old, dark-zoned variety called *Cottage Maid*, which had been fertilised by the pollen of Kinghorn's *Attraction*; and in the result, this one plant yielded me three distinct varieties—viz., *Rainbow*, a silver-variegated Zonal; *Empress of the French*, a marbled-stemmed variety, in the way of *Corse Unique*; and a dark-zoned, strong-growing sort, which was named *Emperor of the French*, and which, like its great prototype or namesake, appeared destined to play a very important part in the development of its race, inasmuch as it was instrumental in originating the now famous group of *Golden Variegated Zonal*, or *Golden Tricolor-leaved* varieties, which at that time had not been heard of, and, in fact, were not then in existence.

"About this time, 1855, it occurred to me that, considering the great advance that had been made in the way of improving the silver-margined varieties of the *Zonal Pelargonium*, something similar might possibly be effected with the golden-margined sorts, or rather sort, for at that period I believe *Golden Chain* was the only yellow-margined variety in existence. As to the date of the origin of this variety, there may possibly be some uncertainty; but that it is a sport from *Pelargonium inquinans* I think there can be little reason to doubt. In a very interesting paper communicated to the Royal Horticultural Society by Mr. Wills, of Houtroyde, the origin of this variety is put at about 1811. But I am inclined to think that it originated long previous to this date, for I have been informed that the late N. S. Hodson, Esq., of the Botanic Garden, Bury St. Edmunds, was in possession of a somewhat large and apparently old plant of this variety as early as the year 1822 or 1823. I can myself testify that about the year 1817 or 1818, the late Mr. D. Eaton had commenced to use it with excellent effect as a bedding plant, at Shrubland, near Ipswich.

"In the summer of 1855 I fertilised blooms of the old variety named *Cottage Maid* with pollen taken from *Golden Chain*, and the result of this cross was two distinct varieties, both of them improvements upon their pollen parent. They were named respectively *Golden Tom Thumb*, and *Golden Corse Unique*. During the following summer,

blooms of the *Emperor of the French* were fertilised by the pollen of *Golden Tom Thumb*, and this produced a variety which was named *Gold Pheasant*, a decided improvement upon its pollen parent, and inferior only to Mrs. Pollock, which last, together with *Sunset*, were the produce of the two following years, and were obtained between *Emperor of the French* and *Gold Pheasant*, making the latter the pollen parent. Again, using *Emperor of the French* and some similarly zoned seedling varieties as the seed-bearing parents, and using pollen taken from Mrs. Pollock and *Sunset*, the result was the production of the beautiful varieties named *Lucy Grieve*, Mrs. Benyon, *Lady Cullum*, &c."

Coleoptera Hesperidum, being an Enumeration of the Coleopterous Insects of the Cape Verde Archipelago. By T. VERNON WOLLASTON, &c. London: John Van Voorst.

THIS contains not merely an enumeration but a description of the species of *Coleoptera* of the Cape de Verde Islands.

ENTOMOLOGICAL SOCIETY'S MEETINGS.

THE second Meeting in February was held at Burlington House, the President, W. H. Bates, Esq., being in the chair.

Mr. MacLachlan exhibited a living specimen of the Stag Beetle, *Lucanus cervus*, together with the earthen cocoon in which it had recently been found, which also contained the cast-off skins of the larva and pupa states.

Mr. Ianson, on behalf of Mr. Latham, exhibited the nest of a social species of *Bombus* (*Anaphis reticulata*, Walker), from Natal, enclosing a great number of hard cocoons packed closely together, enveloped in a silky substance; also a number of the movable larva cases of a species of *Moth* allied to *Psyche*. Mr. Trimen stated that he had noticed the former nest to be very common in Port Natal, and that the perfect moth was yellow with four dark bars across the wings; the latter cases he had seen hanging by hundreds in *Acacia* trees in the same country.

Mr. Stainton read a few observations on the synonymy of *Tinea* (?) *alpicella* and *Zelleria Saviraga* (n. sp.), and *fascipennella*. Mr. Pascoe exhibited and described a curious new genus of *Cucujidae* from New Zealand, having only four joints in all the tarsi. An elaborate paper on the structure and homologies of the different parts of the ovipositor of female insects, especially in the order *Neuroptera*, was read by Mr. Eaton.

The President read a letter which he had received from Mr. Charles Darwin, requesting information from the members on the subject of the secondary sexual distinctions among insects, as well as upon sexual selection, and on the numerical proportion of individuals in the two sexes of various species of insects. Mr. Moore stated that males only of the *Tomius villosus*, a species which bores into and injures oak wood, had hitherto been seen. Of the curious *Tomius* dispar, the males of which are strikingly unlike the females, the latter were exceedingly rare. On the other, Mr. F. Smith stated that of *Tenthredo cingulata*, a species of Saw Fly common on Fern, the females might be taken by hundreds without a single male being seen; and of one of the Gall Flies he had reared thousands of specimens without having ever seen a male; and the male of *Eriocampa Abii*, another Saw Fly, was even still unknown. It was suggested, however, that the observation of insects in a state of nature was very difficult, and could scarcely be relied upon, as the habits of the different sexes of the same species were in many instances quite distinct, and that it was necessary, to ensure precision, that the species should be subjected to direct observation by being reared in captivity. Thus Mr. Stainton stated, that although in many species of minute moths the females were rarely to be seen at large, yet on being reared artificially there were at least 70 per cent. of that sex to 30 per cent. of males. Mr. MacLachlan stated also that of the curious *Forcas hymnalis* the females were sufficiently common, but that he had only seen four specimens of the male.

The March meeting was held on the 2nd inst., the President, H. W. Bates, Esq., in the chair. The President alluded to the lamented decease of Mr. Arnistead, a gentleman whose attention had long been directed to the study of the natural history of the various species of galls upon different kinds of plants.

Mr. Edward Saunders exhibited a number of species of *Euprestidae*, the nomenclature of which had been greatly confused, and which he had been enabled to unravel by the examination of the typical specimens in the Banksian collection, now in the possession of the British Museum which had served as the originals of the descriptions of many species by Fabricius.

Mr. Pascoe exhibited and read descriptions of an interesting new genus of *Prionidae* from Cape Coast Castle, and a new species of *Oxyecyrus* from South America. Mr. F. H. Wood exhibited several interesting chrysalids of *Sphingide* and nocturnal *Lepidoptera* from Sierra Leone. One of these, belonging to the *Bombycide*, of large size, was remarkable for having two deep excavations near the extremity of the body. He also stated that the long spiral tongue of *Sphinx Lignastri* is twice folded back within the tongue case of the chrysalis.

Mr. Stainton read a further communication from Mr. C. Darwin, requesting information relative to the numerical proportions of the sexes in insects, as well the effect of the brilliant colouring of the

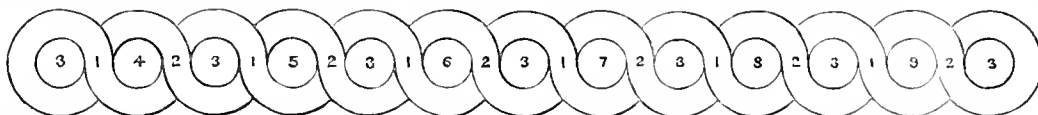
under side of all the wings, or the upper side of the under wings alone in various Lepidoptera, considered as a secondary sexual character, instancing the Fritillary Butterflies, in which the under side of the wings is marked with silvery spots. The President, however, suggested that this peculiarity in these butterflies could not be regarded as connected with the sexual development, as the females were as much ornamented as the males. Mr. Weir stated that he had noticed a curious fact in connection with the brightly coloured under wings of the common *Triphena*, which seemed to indicate that this system of coloration was of no use to the insect in deceiving birds which invariably endeavoured to seize the moth by its very conspicuous hind wings on its attempting to escape by flight, many instances of the moth with torn hind wings having been observed by him. Mr. Stainton read letters from Mr. Henry Doubleday and the Rev. Mr. Hellins relative to the numerical proportion of the sexes in specimens of moths reared by them individually. The former of these gentlemen affirmed that

the males were decidedly more numerous than the females, and that in the whole of the Microlepidoptera he had never observed an instance in which the females preponderated; whilst Mr. Hellins as decidedly stated that there were more females than males produced in the majority of the species which he had reared; and Mr. F. Bond and Mr. MacLachlan stated that in the large Bombycidae, they had reared the two sexes in nearly equal numbers. It was important that the observation should be derived from reared specimens, as in a state of nature it often happened, from the different habits of the two sexes, that only specimens of one sex would be noticed by ordinary observers; as, for instance, in the common May Fly (*Ephemera vulgata*), it is only the males which unite in the beautiful dances in the air which every one must have observed. The President also called attention to a memoir just published by Dr. Kiesenwetter, in which he has applied the Darwinian theory to the development of distinct and permanent races in various species of insects, especially Chrysomelidae.

A RIBBON BORDER OF PELARGONIUMS AND VIOLA CORNUTA.

I DIFFER from your correspondent, "M. H., *Acklam Hall*," in the *Journal* of February 27th, anent a little favourite of mine, yclept *Viola cornuta* (I detect little difference between the rival queens of that ilk). *Viola cornuta* Purple Queen might be said to have swayed a regal sceptre last year over the accompanying little kingdom or queendom of *Flora*, and right royally did she discharge her office, albeit not clad in sheen of crim-

son or gold; not gaudy certainly; but with a quiet loveliness all her own did she entwine herself round the hearts of her beholders, her ermined companion, the tomentose *Cerastium*, acting well as a foil for her beauty. Very chaste indeed was the combination, lightened up by the bright yellow variegation of the circles of Cloth of Gold Pelargonium, and the brilliant shades of scarlet of the other circles.



1. *Viola cornuta* Purple Queen.
2. *Cerastium tomentosum*.

3. Cloth of Gold Pelargonium.
4. Imperial Crimson Pelargonium.

5. St. Fiacre Pelargonium.
6. Baron Nicasoli Pelargonium.

7. Cybister Pelargonium.
8. Lord Palmerston Pelargonium.

This chain border occupies the centre of a long strip of grass, bounded on one side by a shrubbery, and on the other by a terrace wall some 6 feet high, clothed with Roses, Jasmines, &c. On the top of this retaining wall, from the level of the terrace above rises an ornamental parapet wall of dressed open-work Bath stone 3 feet high. From this terrace and the end grassy platform a bird's-eye view of the border is obtained, the windings of the cable being distinctly traced, and the

general effect last year, planted as indicated above, was greatly admired. I daresay a better effect would have been produced had some good dark-foliaged and bright-coloured Pelargonium alternated time about with the Cloth of Gold; but the arrangement, though a show of uniformity was kept up, partook somewhat of our whilom Mentor, poor Beaton's pincushion beds, inasmuch as expediency dictated in a measure the materials employed.—W. HUDSON, *Chase Cliffe, Derby*.

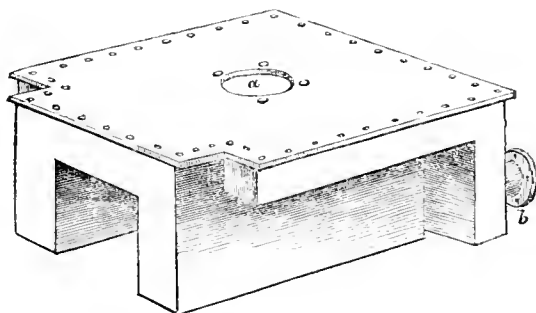
BOILERS FOR HEATING BY HOT WATER.

At a recent meeting of the Leeds Professional Gardeners' Friendly Benefit Society, Mr. R. Featherstone, gardener, St. Ann's Villa, Burley, Leeds, read some notes on boilers used by himself or known by him for heating garden structures. We readily publish these notes, and would do the same gladly with any notes which a gardener would send us, relating facts on any horticultural subjects, whether in his own experience or observed by him in the practice of others. Such records of facts are among the best additions to knowledge.

"Where there are many houses, and a continued high temperature to maintain, no doubt the hot-water system is found far superior to the old flues. Granted, then, that to secure the best boiler suited to our purpose must be the first consideration.

"We have at St. Ann's Villa a kind called the Pocket Boiler, five of which are now heating fourteen houses very effectively; and believing that they are not in such general use as their merits deserve, I thought the accompanying sketch of one

FIG. 1.



a, Flow pipe; b, return pipe.

(fig. 1) would be of interest, as affording some means of comparison to others perhaps more extensively used.

"It will be seen that they are very simple in construction, and being all of cast iron are, therefore, very durable; also that they bear some resemblance to the old saddle boilers, but, perhaps, more to one I have seen advertised as the terminal saddle, and which I have no doubt is a very good boiler.

"A neighbour of mine (Mr. Wright), has had one of them put in place of a more complicated boiler, which failed after being in use only a very few years. After a few weeks' trial he speaks well of it, though I fancy one defect in it is the flaps or sides of the saddle not being deep enough to admit of its holding more fuel; and as the firebars are hollow and part of the boiler, the fireplace cannot be made larger by setting the boiler on a course or two of bricks, which is an advantage of the Pocket Boiler.

"I object to hollow firebars, as tending to prevent thorough combustion — a matter I hold to be nearly as important as utilising the heat; indeed, in our case, where we have to burn a low quality of fuel, consisting of cinders that fall through the bars of iron-puddling furnaces, it is of the first importance to ensure thorough combustion.

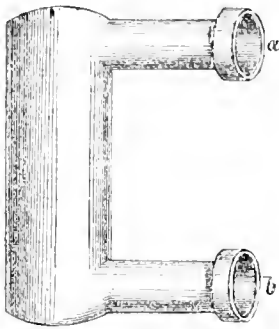
"About three years ago my employer, Mr. Butler, bought one of Clarke's Patent Water Jacket Boilers to heat the front hall, passages, &c.; but it fails entirely when it is attempted to burn the same quality of fuel as we burn in the garden. I attribute this to the hollow firebars and water jacket, as it is called.

"Our Secretary (Mr. Sunley), has in use one of Marriott's boilers, about which there were some inquiries a short time since in *THE JOURNAL OF HORTICULTURE*. He says that he is perfectly satisfied with it, and would not exchange it for any other kind of boiler.

"Other two neighbours of mine have boilers like fig. 2, with which they are both highly satisfied. For small places, to burn any quality of fuel, and to need little attention, I strongly commend them. Not the least of their recommendations are their low price, simplicity of construction, and durability.

"Another boiler which I have proved to be good is *Monro's Cannon*; but I scarcely think it will be found so durable as the *Pocket Boiler*. In short, after twenty years' experience with many kinds of boilers, I give my verdict in favour of the

Fig. 2.



a, Flow pipe; b, return pipe.

Pocket Boiler where there are numerous houses to heat. It would be better, on the score of saving labour, that instead of having five boilers there should be only two of twice or thrice the size of those we have; but, whatever kind and size of boiler be used, I urge the paramount necessity of using plenty of piping, the want of which the best boiler cannot compensate for."

NOTES AND GLEANINGS.

As a further step towards the advancement of the education of young gardeners, the Council of the *ROYAL HORTICULTURAL SOCIETY* have decided to commence forthwith a course of instruction in land-surveying, measuring, and ground work engineering to the students at Chiswick under a skilful engineer. They have also decided to open a class for instruction in drawing, which shall be open to all on the payment of a small fee. This class young gardeners residing within convenient distances of Chiswick, as well as the Chiswick students, will have the privilege of attending, and we trust that all who have the opportunity will avail themselves of the great advantages that such instruction affords them. All particulars relating to the drawing class may be obtained by applying to Mr. Richards, Assistant Secretary, South Kensington.

— On the 9th instant, at Margate, died Mr. EDWARD TUCKER. As a naturalist he was well skilled and liberal in imparting information; as a man he was kind and truthful. He first recognised the fungus causing what is emphatically called "the disease" of Grape Vines, and it is named after him *Oidium Tuckeri*.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Celery, the early sowing must be pricked out as soon as the seedlings have formed two rough leaves. The last of the *Cauliflower* plants should also be planted out from their winter quarters; and if any of the autumn-sown *Cabbages* remain in the seed beds plant them out, and fill up any blanks in the youngest rows. Where young *Cabbages* are in demand throughout the season, a few seeds should be sown every fortnight or three weeks until the end of June. *Corn Salad* or *Lamb's Lettuce*, sow now for a summer supply, either thinly broadcast in beds, or in lines about 1 foot apart, and cover lightly with fine soil. *Peas*, make a successional sowing of the *Champion* of England, *No Plus Ultra*, or any of the earliest wrinkled Marrow varieties; also of Johnson's Wonderful Long-pod *Beans*. When the plants of the early sowings of *Peas* are about 2 inches high, draw the soil neatly to them, and apply stakes of about the height to which the variety grows. Spruce fir or other evergreen branches will afford a useful shelter to early crops. As soon as the plants of the early crop of Broad *Beans* appear above ground the soil should be carefully ridged-up round them, and branches of evergreens stuck rather thickly on each side of the rows to protect them from frosty winds. *Salsify*, if a supply is wanted early in summer, sow a small quantity now, but for the main crop the end of April or beginning of May is early enough, for the plants sown earlier are apt to run to seed. *Skirret*, sow now, if the ground is in a fit

state for working, in lines 15 inches apart, covering the seed with the finest of the soil to the depth of an inch. Turnip, sow in a warm sheltered situation a small breadth of the Early Dutch for the chance of an early crop.

FRUIT GARDEN.

If the weather continues dry, and free from gales and sudden changes which generally occur about this time, the blossom of Peach and Apricot trees will stand much cold and yet set freely; coverings should be at hand to put over them in case of hard frost. Any trees or bushes transplanted this winter should not remain much longer without some mulching, if not already secured in this way.

FLOWER GARDEN.

Ply the broom and roller vigilantly, both on the lawns and walks, and, above all, cut the grass well into the "bottom" before the middle of next month, or you will be troubled with it throughout the season. Where rockwork is covered with plants it is one of the most difficult things in the garden to manage, so as to avoid destroying the plants on the one hand, or giving it a stiff formal character on the other. In regulating the plants avoid everything like formality; and while you keep each plant in due bounds, do not, if you can possibly avoid it, distort the symmetry of Nature. A little fresh peat or leaf mould may be added as a top-dressing to the more choice of the alpine plants, and a few seeds of trailing annuals may be sown in any vacant places. The boisterous winds of March are anything but congenial to florists' flowers, and the frosts that may be constantly expected must be guarded against with redoubled care, for every florist knows that more havoc is made amongst collections during the present month than at any period of the year. The *Auricula* is very susceptible of cold when expanding its blossoms, and should the temperature of the frame be too low, it is extremely difficult, and with some sorts wholly impossible, for them to bloom. When the nights are likely to be fine the frames ought to be left open so that the stock of *Carnations* may be hardened preparatory to their removal into blooming pots. Very few *Ranunculuses* ought now to be out of the ground. Seed may still be sown with success. Pinks appear to have been rather affected by the late winds. All cracks in the beds must be closed, and the plants looked over after frost and fastened. *Polyanthuses* are rapidly growing; care must be taken to trap snails and other insects injurious to the forthcoming blossoms.

GREENHOUSE AND CONSERVATORY.

The temptation to collect all plants in flower into the conservatory being great, you may be led into error by crowding them too much at this early season. Crowding plants in winter is a matter of necessity, and when the plants are in a dormant state this is of less consequence; but now that they are in active growth, unless they have room so as to allow of the admission of light and air amongst them, they soon spindle up out of all shape and proportion. Except in fine days little air is necessary for this house in March, and much might prove very injurious to tender flowers. *Camellia* blossoms are as soon affected as any by cold currents; damp the paths in the evening, and light gentle fires at night while the weather continues cold, and do not let the temperature fall below 40° for the season. The same routine of potting and propagating must be proceeded with in the greenhouse for some time yet, and the house must be kept damper and warmer. Syringe in the mornings, and damp the paths only in the evenings.

STOVE.

Propagation and potting will occupy the greater portion of the time here for the next six weeks. Attention must also now be directed to training and regulating the young growths of climbers and other free-growing plants. Newly-potted plants do not want much water until they are more established in the fresh soil. Bulbs of the *Amaryllis* tribe brought in for forcing may be potted, if they require it, when their leaves are half grown, but never pot them when they are at rest. The temperature here should now range from 60° to 65° in the morning, and air should be admitted as soon as the sun heat raises it to 70° or 75°. More frequent syringings and a moister atmosphere should now be kept up.

PROPAGATING PIT.

Dahlias and *Chrysanthemums* should now be propagated in order to produce stout early plants. Every young shoot of the *Gardenia* should be propagated. There is scarcely a sufficient number of them in any establishment. Any shelter that will do for *Fuchsias* will suit them in winter, and they force all the better if kept cool in winter. Bulbs of *Amaryllis* or other tribes brought in for forcing often make fine large leaves

but show no blossom, and on that account any out-of-the-way place is thought good enough for them afterwards; but the less these are disposed to bloom the more care is necessary to expose their leaves as much as possible to light, and to see that they have neither too much nor too little water, and that the pots are well drained. Turfy loam with a little leaf mould and sand suits a great many of these; peat is injurious to some of the more delicate sorts, whilst the most tender of the Iridaceæ will live only in light peat. Always keep up a moist growing heat of from 60° to 80° in these pits from this time, and fumigate them as soon and as often as the green fly appears, and avoid strong doses; better smoke often and give a little at a time.

PITS AND FRAMES.

Many of the established and more hardy plants in these structures may now be removed to temporary pits to make room for the spring-struck stock, now being daily potted-off. Do not permit any vacant space in the propagating frame until you have more plants than you require for bedding-out. It will be necessary to keep a genial heat in the cutting frame, and to top all cuttings that have taken root and are beginning to grow.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The soil with us was too wet to permit of sowing seeds of the main crop of Onions, but sowed a few to keep on, also beds or rows of Lettuces, Radishes, and Spinach. We lately mentioned the efficacy of soot sown over the rows of Peas and Beans in keeping away mice and rats, but the soot not being renewed, after being washed by the rains, some rows had a number of vacancies in them, the Peas being cut over below ground just as they were coming well above it. A fresh dusting, and some tempting *poisoned baits* put in the way of the vermin, have rendered their visits since inconspicuous. This baiting when it can be done is more effectual than trapping. In wheeling away the dung from an old hotbed the other day, we found the remains of many huge rats that had died in their runs. Whatever material is used, the chief secret of success is never to touch the bait with the human hand. We generally mix all, and lay down securely where domestic animals, and even game, are not likely to go, using only a wooden spatula.

Moles.—These have been very troublesome of late, not only in the park but the lawn. One thing in favour of the steel and other traps is, that generally the mole when caught is killed at once. We were never great adepts at catching them, even when we used thick gloves to keep away the taint of the hand. One man who has taken it in hand, and been very successful, rubs the trap and part of the run with the skin of a dead mole.

General work has been much the same as in the previous fortnight, only we took thirty large pots, filled them with rough hay inside, except a small open space in the centre, and put them over *Sea-kale* in the open ground, after placing some ashes round the crown. As we may want to cover a good deal more placed a cone of ashes over the crowns, and a little litter, as this vegetable is not easily blanched white, if it once is allowed to become green. The packing of hay or of clean litter inside, prevents the shoots being over-heated, or cooled too much, and does away with any necessity for placing litter outside of the pots. Now is a good time to make fresh plantations. One-year seedlings do well, and if scarce, pieces of the roots 4 inches in length answer very tolerably, only they do not become so strong generally in one year. If to remain, the ground for this and Asparagus can scarcely be too well stirred, or too much enriched, if the manure used is sweet and decomposed, where it is near the roots. Rich surface dressings are eagerly enjoyed, and so is sowing the surface in summer, which also drives all slugs and snails to a distance, if it does not destroy them outright.

FRUIT GARDEN.

The chief work has been regulating Vines, thinning-out the superfluous shoots in the earliest house, allowing the next to come on gradually, thinning the shoots in the Peach house, giving all the air possible in the orchard house, and using a rough fan, made of a thin board with a handle, in calm days when there was a little sun. All brushing with camel-hair pencils, fanning, and shaking the trees, so as to assist in the dispersion of the pollen, is of but little use, unless the sun lends his aid. A few hours' sunshine in spring will next to secure a crop under glass. The pollen then becomes so light and easily diffused. We recollect, many years ago, having a Peach

house in bloom some weeks before Christmas, and although the bloom was fine, and seemed at first to set fairly, a great many of the young fruit dropped afterwards, long before the stoning period, and on cutting up scores of them, they were black at the heart, showing that though the germen had increased in size, fertilisation had never properly taken place. From the time of the bloom opening to its dropping the trees had not half an hour's sunshine if all the five minutes now and the five minutes then were added up together. A few hours' sunshine in a mild day, with a gentle breeze when the trees are in bloom, and the pollen boxes opening, almost makes sure of plenty of fruit setting. However, as it is always well to avoid reflections afterwards, the dispersing of the pollen by the modes adverted to may be resorted to. As giving data for comparison we may state that on this, the 14th of March, a few blooms are opening in the latest house, but the great bulk of the buds are strong and clustered together like strings of Peas. By all the air possible we will keep this house back, but the coming warmth will beat us, and our chief care at present is to see that the trees are not overdry, as that might cause them to drop their buds, and not to be flooded with water, as that, from the extra stimulus given, might be attended with a similar result. Hence when trees in such circumstances are in pots, it is always advisable to thoroughly moisten the soil—not at once, but at two or three waterings, with a couple or more days between them.

In the earliest house now in full bloom we give less air and shut up earlier, and when once the fruit is set we shall give air early in the morning, increasing if it wants it, and shut up and sprinkle early in the afternoon, taking advantage of the sun to do what forcing we there want. In this house the trees on the back wall were coming into bloom a week ago, and none of the buds were opening on the trees in pots in front in the border. As for several reasons we did not wish the pots to be much behind the walls, we curtailed the front air more, and that has helped them on. It has also caused two rows of Strawberries, placed near the front, to grow strongly. These houses since their washing in spring have not been touched with the syringe, and the trees will not be interfered with by watering overhead until the fruit is set. If very bright parching weather should set in, we will sprinkle the pathway and floor with the syringe to prevent the atmosphere becoming too parching. There has been no necessity for anything of the sort as yet, and Peaches when in bloom like the air to be rather dry, provided the moisture has not been dried out again by a sharp frosty east wind. Peaches and Nectarines also do very well if the house is shut up at night; but Plums, Cherries, and especially Apricots, should always have a circulation of air, however little the openings may be, until after they are fairly set. A little frosty air does little harm to them under glass so long as the blooms are dry. A close confined atmosphere, though not warm, will almost insure the dropping of the finest Apricot blooms, and also when just fresh set. Even when Plums and Cherries are to be forced they do best with a low temperature, and plenty of fresh air until safely set, and then they will stand a higher temperature gradually applied. As to Pears and Apples under glass, we have ripened them, and found the flavour, especially of Apples, very saccharine and delicious; but when much is done in this way it is the best plan to have the fruit set with plenty of air under glass, and then take the plants out in a dull day, and plunge the pots where water and mulching can be given to them. The slightest shade might be needed for a few days, especially if bright sun succeeded the dull day on which they were moved.

Melons.—Planted Melons in the box in which we raised and potted our spring Cucumbers, and left a number more to be planted out as soon as possible. As we cannot yet empty a pit full of cuttings striking, we gave the Melons left a larger pot to prevent their becoming stunted. We have frequently described our method of Melon culture, as to training, stopping, &c. We prefer single plants instead of turning out two or three plants from one pot. As saving labour and all trouble of future earthing-up, we may mention that in general we place the necessary quantity of soil in the bed at once. Our frames are so shallow, that to afford the foliage full room the soil is only an inch or so above the level of the bottom of the frame. This distance is kept all along, for as the dung bed sinks the frame sinks equally with it. In making the bed, therefore, the frame being 6 feet in width, a trench from 20 to 24 inches deep, and from 24 to 27 inches in width, is left in the centre, with a slab back and front, to confine the earth that is put in to this trench, with the exception of a

sprinkling over the dung at back and front. The soil in the trench thus soon becomes warm, but never so hot as to produce what is technically called burning, and yet the dung on each side preserves a mild genial heat a long time, and this amount of soil we have found sufficient for the generality of fair-sized Melons, and there is no trouble and no checks from future earthings-up. We use soil much stiffer for Melons than for Cucumbers, and in the case of the former we tread the soil firm before or after planting. When we grow Cucumbers early in frames we adopt much the same system of giving only a limited amount of earth for the roots; but in their case, if kept long in bearing, we top-dress with rich compost several times during the season. We were first induced to limit the soil by growing Cucumbers very successfully in pots and boxes.

ORNAMENTAL DEPARTMENT.

First Sowing of Seeds.—"A." cannot see the reason why we wish the ground to be dry and aired before we sow main crops out of doors, with the directions for draining, filling, pressing, and watering the soil in pots before we sow in them, to be placed under glass, or in a hotbed; and one other thing puzzles him very much, that one pot will scarcely yield a plant, whilst another pot sown at the same time from the same packet will come thickly all over, though the one pot had as much seed given to it as the other. In the first place, we like a rather dry bed for our seeds out of doors, because stiff soils, when moist, are so apt to crust the seeds, as to seal them up from the action of the atmosphere, and then no germination would take place. Again, sowing when the ground is wet, is apt to "poteh," and batter the soil, and it will take nearly a season before it again becomes so that the rains will pass easily and freely through it; and, lastly, because sowing when the surface is pulverised and dry, though giving the seed at once a good bed, makes sure it will have moisture enough from the damp beneath the seed, and which will rise all the more freely the more the sun acts on the surface.

The same principle is acted on and advised, when sowing particular seeds in pots. The drainage and the rougher soil below, and the finer soil above, will secure perviousness to air and moisture, and the previous watering secures moisture to cause the seeds to swell; the dusting with drier soil before sowing gives the seed a good bed, and the covering makes all secure, and then the shading will cause little watering to be needed before the seedlings appear. The reason for all this is twofold. Some seeds are very impatient of much water as they germinate, and immediately afterwards. If these seed pots are plunged beyond keeping the surface rather moist, much watering will not be required, and thus one element of safety is secured. Then many seeds are very tender, just when they are on the point of becoming plants, and having come to this state, even though not appearing above the soil in the pot, they are very apt to shrivel-up with dryness. Of course this should not be allowed; but who is so perfect as to attend to all things, and if a few pots should be missed, the well-drained moist soil beneath the seeds will act as a safeguard in securing just the requisite moisture. At any rate, with a powerful microscope we have found in seed pots in which stems were never produced, plenty of seeds, that showed they had been arrested after germination, by the shrivelled-up rootlets. So much for the reasons for the mode of preparing seed pots recently given.

As to Cuttings.—"B." wishes to know what is the use of silver sand placed on the surface of a cutting pot, and wants to know if other sand would not answer as well. The chief use of sand mixed with the soil in a cutting pot is to give free egress to the little rootlets, and equalise in the best manner, after drainage, &c., the requisite moisture. Its use on the surface of the pot is to keep the base of the cutting firm, and also to keep that part especially from being exhausted by evaporation into the atmosphere of the place. For very tender small cuttings, either a bell-glass or a little frame will be needed in addition to the glass roof, to prevent the cutting becoming exhausted by the free transpiration. Hence, for many cuttings, such as Heaths, this silver sand is a great advantage, and for general purposes it is also the best, as it is the purest; but for commoner purposes, pit, river, and road-drift sand may be largely used, and that will be the best that has least earth or other impurities. Almost all common sands may be improved by washing. When it can be had silver sand, the best, should be carefully used.

Another correspondent and his neighbour, amateur beginners, cannot see how it is possible to take a cutting from a growing plant, and yet keep the cutting growing, and so that it will scarcely show the lopping to which it has been sub-

jected. Well, we would rather not boast of the possibility of doing so, we will be perfectly satisfied if our random remarks shall show these and our other readers that the result would be at least a desirable consummation, and one which would set adrift the too common practice of letting cuttings wither and fall down, and then go to much trouble to make them stand upright again before they they can do anything to make plants of themselves. Be assured much will be gained if the cutting never shows the lopping-off from its mother plant. This can be managed even with tender plants by reducing the foliage a little so as to lessen the transpiring surface, and covering with a bell-glass, and shading in sunshine, so as to force the cutting to absorb as well as perspire. In the case of such plants as Verbenas, Lobelias, Calceolarias, &c., at this season hundreds and thousands may be struck in a moderate hotbed without any bell-glasses, with nothing but the sash of the frame, and yet never show a flagged leaf, and if 18 or 24 inches from the glass will rarely require the least shading. Of course such cuttings will not strike in half the time they would do in a strong heat under bell and other glasses, in addition to the glass roof of the place in which they are growing; but they will be sturdier, and require less time to harden-off so as to stand in the open air at last.

One remark more. Shading will prevent the flagging of a cutting, because it will lessen the evaporation of its juices; but bear in mind that shading prevents rooting, and the more you give of it, the more will the cutting be drawn out, lengthened upwards, without forming roots in proportion at the other extremity. Never, therefore, let shading remain longer than it is absolutely necessary. In many cases where the cuttings are exposed to the atmosphere of the place, and a fair distance from the glass, we prefer in sunshine gently to dew or sprinklo with a syringe their foliage, instead of giving them shade, because the shading is so apt to be left on too long.—R. F.

COVENT GARDEN MARKET.—MARCH 18.

The demand is slow, and does not keep pace with the supply, for in many articles we are overstocked. Cucumbers are abundant for the time of year. Heavy consignments of foreign goods, as well as from the Channel Islands, have again come to hand this week, comprising Asparagus, Broccoli, Artichokes, Salads, and Green Peas.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples 1 sieve	3	0	5	0	Melons..... each	0	0	0	0
Apricots doz.	0	0	0	0	Nectarines..... doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges..... 100	3	0	7	0
Chestnuts..... bush.	10	0	16	0	Peaches..... doz.	0	0	0	0
Currents..... 1 sieve	0	0	0	0	Pears (dessert) .. doz.	4	0	8	0
Black do.	0	0	0	0	Pine Apples..... lb.	5	0	10	0
Figs doz.	0	0	0	0	Plums 1 sieve	0	0	0	0
Filberts..... lb.	1	0	0	0	Quinces..... doz.	0	0	0	0
Cobs..... lb.	1	0	0	0	Raspberries..... lb.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Strawberries... per doz.	2	0	3	0
Grapes, Hothouse. lb.	12	0	20	0	Walnuts..... bush.	10	0	15	0
Lemons..... 100	8	0	12	0	do. per 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes..... doz.	3	0	4	0	Leeks bunch	0	3	0	0
Asparagus..... 100	7	0	20	0	Lettuce per score	1	0	1	6
Beans, Kidney .. 100	0	0	3	0	Mushrooms... pottle	1	0	2	6
Beet, Red..... doz.	2	0	3	0	Mustd. & Cress, punnet	0	2	0	0
Broccoli..... bundle	0	6	1	6	Onions..... per bushel	3	0	5	0
Brus. Sprouts 1 sieve	2	0	2	6	Parsley..... per sieve	4	0	5	0
Cabbage..... doz.	1	0	1	6	Parsnips..... doz.	0	9	1	0
Capsicums..... 100	0	0	0	0	Potatoes..... bushel	4	6	5	6
Carrots..... bunch	0	6	0	8	Kidney do.	4	0	6	0
Cauliflower..... doz.	3	0	6	0	Radishes doz. bunches	1	0	1	6
Celery..... bundle	1	6	2	0	Rhubarb..... bundle	0	9	1	0
Cucumbers..... each	3	0	4	0	Savoy..... doz.	1	0	2	0
Endive..... doz.	1	0	0	0	Sea-kale..... basket	2	0	3	0
Fennel..... bunch	0	3	0	0	Shallots..... lb.	0	8	0	9
Garlic..... lb.	0	8	0	0	Spinach..... bushel	2	0	4	0
Herbs..... bunch	0	3	0	0	Tomatoes..... per doz.	0	0	0	0
Horseradish .. bundle	2	6	4	0	Turnips..... bunch	0	4	0	6

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

LYCHNIS.—Miss King's note was forwarded to the writer of the communication.

LOCAL FLOWER SHOWS (Alpha).—We cannot afford space for reports of any except the most extensive of the country shows. There are several hundred of such exhibitions.

ALLOTMENT GARDENS (J. H.).—We know of no rules required except that the tenants shall pay their rents regularly, and keep their plots free from weeds. If you call at our office as you propose, there is a pamphlet awaiting you. We recommend you to look at "Allotment Farming," which is only 3d. in price.

WHITEWASH (S. P.).—To prevent its rubbing off dissolve plasterers' size in the water. A little washwoman's stone blue added imparts a good tone to the white and improves the appearance of the interior of a greenhouse.

FLOWER SEEDS.—"J. H." wishes to know where he can obtain seeds of the following plants:—*Tussilago petasites*, *Salvia nemorosa* (of Sir James Smith), *Origanum humile*, *Origanum rubescens* (of Haworth), *Cuscuta sinensis*, *Andropogon populifolium*, *Nepeta Mussinii*, and *Phacelia tanacetifolia*.

VERBENAS OF DISTINCT COLOURS (F. J.).—*Purple*.—Purple King and Admiral of the Blue. The latter is a bluish purple with a white eye. *Scarlet*.—Firefly, and a very dwarf-growing scarlet is *Melindere splendens*. *White*.—Le Grand Bonlie de Neige and Snowball. *Rose*.—Etoile des Roses, Crimson, and Crimson King.

WOOD TRELLIS (Idem).—It is quite unnecessary to have the laths placed across each other obliquely so as to form oblong lozenges as by your second plan, and we do not approve of your first plan by which they are placed vertically. We would have them horizontal. The latter will do 6 inches apart; that is a very good distance for the plants you name.

OTAHUTE ORANGE LEAFLESS (A Constant Subscriber).—These Oranges generally produce flowers and fruit very abundantly and but little foliage. This is mainly due to the plants being allowed to carry all the fruit that sets, and we have seen a score of fruit upon a plant, for which half a dozen would have been enough. We would thin the flowers, reduce the fruit when it is set, and give the plants the benefit of a moist and rather warm greenhouse so as to encourage free growth. A temperature of from 50° to 55° at night, and from 65° to 70° by day will, no doubt, give you growth, and, of course, better foliage.

TEMPERATURE FOR PLANTS (Idem).—*Pteroma elegans* and *Statice Bolfordi* are warm greenhouse plants. You would see what Mr. Douglas stated with respect to their cultivation in page 182. *Gesnera cinnabarina* and *Hibbertia* are stove plants and cannot be grown in a greenhouse. They are of easy culture. Some excellent hints on the management of *Gesnera cinnabarina* were given in page 149 of the Journal for February 20th.

SEEDS OF NEW ZEALAND PLANTS (O. W. P.).—We do not know the native names of New Zealand plants, and cannot, therefore, assist you.

CORNEA CULTURE (Idem).—You do not say what size your plants are; we will, therefore, take for granted that they are young plants and in small pots. They must now be potted (unless they are in flower), in pots 2 inches wider than those they are now in, using a compost of two-thirds sandy fibrous peat and one-third loam from rotted turves old and mellow, and silver sand equal to about one-sixth of the whole may be added, and a like proportion of bits of charcoal or small crocks, which will keep the soil porous. The fresh pots should be thoroughly clean inside and outside, and good drainage should be provided by placing potsherds at the bottom, and to the extent of one-fourth the depth of the pot, and upon these may be placed a thin layer of moss or turfy peat. The plant being turned out of the pot, remove the old drainage and any loose soil that comes away easily, but do not disturb the ball beyond loosening the outside a little with a pointed piece of wood; place enough soil in the pot to raise the collar of the plant within half an inch of the rim; introduce the plant in the centre of the pot, fill up around the ball with the compost, making it rather firm about the old ball, give a good watering through a fine-rosed watering pot, and place the pots in the warmest part of the greenhouse, but near the glass. A temperature of 45° at night and 55° by day from fire heat will be sufficiently warm. The plants should not be allowed to suffer from want of water; indeed, after the roots are working freely in the fresh soil they should be well watered, and a gentle syringing overhead morning and evening will be more advantageous than too much water at the roots until they recover from the potting. The soil must not be saturated with water, nor should it long remain dry, and it must never become so dry as to affect the foliage. They may be kept rather close for ten days or a fortnight after potting, and a slight shade may be given from bright sun in the early part of the day; but when they become established they cannot have too much light and air, but avoid cold drying currents. Abundance of air and close proximity to the glass are necessary to secure compact growth. By June the plants will have filled the pots with roots, and when that is the case they may be potted in 8-inch pots; but not unless they have made good growth and filled the pots with roots. The same compost as that previously used may be employed, and a good watering given. After potting place the plants in a cold frame or pit if at hand (if not return them to their old quarters), and keep close and shaded from bright sun for ten days, but admit a little air every morning and shut up early in the afternoon, giving a gentle syringing morning and evening, but avoid anything like heavy waterings until the plants are fairly established in their fresh pots, when a more liberal supply of water will be necessary. It should, however, be given with care, and air should be admitted freely. In warm weather the lights may be drawn down at night, and drawn on in the morning, tilting them high at back, and if very dry hot weather a slight shade from hot sun will be beneficial. The growth being now vigorous, any straggling side shoots should be cut or pinched back and a close pyramid formed. This should not be practised after the middle of July. In August the growth will be complete; the plants may then be fully exposed night and day except when the weather is very dry and hot, then a slight shade will be very beneficial, and during heavy rains the lights may be drawn over the plants but tilted at the back. In October the plants should be removed to the greenhouse, be placed near the glass, and in a position which is not shaded, affording them an abundance of air, and to keep them from becoming one-sided the pots should be turned halfway round occasionally. Avoid cold draughts of air, give water rather sparingly and very carefully in dull, damp weather, and, as a rule, water will not be required more than once a week in winter, but the soil must be kept moist, and when the plants are in flower a liberal supply will be necessary. After flowering in spring place in a cool situation for a fortnight or three weeks, then cut them in rather closely, shortening back all the straggling shoots, and set the plants in a rather close and moist atmosphere. When the fresh shoots are an inch long repot, giving a liberal

shift, the same compost being used, and the same course pursued as in the previous year. If the plants are old they may be slightly disrooted every year, and repotted in the same size of pot. Correas are rather subject to red spider, but it may be kept under by a free use of the syringe, and they are sometimes attacked by scale owing to their being kept too warm. Exposure in summer is the best remedy for it.

PLUMBAGO STARTING (A. L.).—The plant of *Plumbago capensis* should now be pruned and started into growth, and when it has made shoots a few inches long it should be repotted. The *Stephanotis floribunda* should not be started until the beginning of May; and the *Bougainvillea spectabilis* should be retarded and kept in a cool house until the beginning of June, but we very much question your having it in flower at the time named—the middle of July.

STRIKING CUTTINGS OVER A FLUE (A Subscriber).—We fear your chance of striking cuttings by placing them upon the greenhouse flue is very small, as the heat will be so fluctuating. We would advise your placing a flagstone or thick slates upon the flue, and have a box made about 3 feet long and from 18 inches to 2 feet wide, according to the width of the flag or slate bottom placed on the flue. The box may be 15 inches deep at back and 1 foot in front, and should have a glazed frame or light covering it. The light may be hinged to the box at back, or it may slide; it is always best to have it moveable. You may then place the box upon the flag, place 3 inches of coarse gravel at the bottom, and then from 4 to 6 inches of sawdust or other loose plunging material, in which you can plunge the pots containing the cuttings. The light being put on, you may secure a moist and close atmosphere. A thermometer placed inside you may rise to 60° or 70°, which will be sufficient heat for the cuttings you name; indeed they will strike well if you cannot command more heat than from 50° to 55° at night. Any excess of heat or moisture may be disposed of by raising the light. Shade will be required from bright sun.

FUMIGATING WITH TOBACCO (Idem).—For a house the size you name half a pound of tobacco paper will be sufficient. Your best mode of fumigation will be to take a flower pot, make the hole rather large, and place two pieces of wood on the floor or on a slate in front of the house, so that the pot will stand upon them and air pass under the pot, the hole being left free. If the tobacco paper is rather dry half of it should be made damp, but if it is all wet half of it must be made rather dry. It should be torn in pieces about the size of half a crown, and the damp and rather dry be kept separate. Choose a calm evening, and, having the foliage of the plants dry, shut the house up closely, and place a few lumps of charcoal in the fire, and when they become red hot put them at the bottom of the flower pot. Two or three lumps about the size of a walnut will be sufficient of lighted charcoal to place in the pot, which without delay should be set upon the pieces of wood; and upon the charcoal should be put the rather dry tobacco paper, placing it lightly over the charcoal. When it commences to smoke put on more of the rather dry paper, and then the damp tobacco paper. You may repeat the fumigation the next night but one, and again in a week. We think this will destroy the green aphids.

ODOUR FROM LIQUID MANURE (S. S.).—We would not recommend the disinfecting of the liquid manure, for the odour of which you complain is quite as stimulating to the leaves as the liquid is to the roots of the plants. Liquid from sheep's droppings is more powerful than that of cows, but is not so unpleasant, and it does not clog the watering cans. Only place a peck in a tub, and pour over it thirty gallons of water, and stir well up and frequently until dissolved. For a greenhouse, in consequence of the smell of liquid manure being objected to, we have employed soot water made by pouring thirty gallons of water over a peck of soot, stirring well up, and letting the liquid stand for forty-eight hours, and then stirring again previous to use. We do not say this is equal to liquid from sheep droppings, but it is a good liquid manure. We have added thirty gallons of water and one peck of sheep droppings to the soot water above named; or put one peck of soot and one peck of sheep's droppings to sixty gallons of water, and have not had any complaints of the smell.

LIQUID MANURE (Newcastle).—The liquid from night soil is a very powerful manure, and is good for all the plants you name, but should be diluted with not less than six times its bulk of water when applied to plants, and for ground where seeds are to be sown it may be poured on undiluted some time previous to sowing the seeds. Night soil mixed with an equal quantity of dry soil is very beneficial to a kitchen garden, and a very valuable addition to the manure heap.

SOWING GRASS SEEDS (Idem).—Early in April is the best time to sow grass seeds. We would spread a little fine rich soil over the ground previous to sowing, and scratch it well with an iron rake. 2 lbs. lawn grass seeds will be sufficient for the extent of ground you mention. After sowing roll well; or, if you have not a roller, beat well with the spade, taking care that the soil does not clog to the spade. The seeds are best sown when the ground is dry.

CUCUMBER BED MAKING (Idem).—We think the time you name would be very suitable, as you need not then make so high a bed; one 3 feet high will be quite sufficient to make in the middle of April. Horse dung is certainly best for hotbeds; but we have used straw cow dung successfully, and should prefer it if you could obtain it for late hotbeds, as it does not heat so violently as horse dung. If you use horse dung—which we should in your case prefer, as it will be the best for your soil when done with for hotbeds—take care that it is turned over once or twice before being used, in order to secure a milder heat and its parting with the rank steam. If very dry, water should be thrown over it at each turning. It should be made regularly moist throughout, to give a good enduring heat.

TREATING GROUND FOR ONIONS (G. P.).—It is indispensable for a crop of Onions that the ground be firm, and especially in the case of light soils. It cannot be made too firm, but avoid making it so when it is wet. Your other question was answered in the Journal of March 5th, page 191.

PIMELEA HENDERSONI COMPOST (E.).—For the plants you name, in addition to that now mentioned, the following compost will grow them well—namely, two-thirds sandy fibrous peat, one-third well-reduced loam, from rotted turves torn in pieces with the hand, rubbed, and made fine, but not sifted, one-sixth silver sand, and a similar quantity of pieces of charcoal from the size of a pea up to that of small hazel nut, the whole well mixed. Good drainage must be provided.

WATERING LAPAGERIA ROSEA (Q. G.).—Your plant will require water every day when it is in free growth, and may have a three-gallon watering

poiful of water at each watering. The soil must be very well drained. You should not cut off any of the stems, but let all grow. We imagine the plant is a large one, if not, half the quantity will suffice; and, if newly planted, every other day will be sufficient watering until the roots are working freely in the border.

VIOLA CORNUTA NOT FLOWERING (S. S.).—We fear you have not the true variety. It is so very free-blooming that we could hardly credit its not blooming, had we not had similar instances. In one case we had it from seed, and the plants produced but few flowers for a year or two; but after they were propagated by cuttings or division of the old flowerless plants we had an abundant bloom. Having the true variety, you cannot grow it without having a mass of bloom; but we find that sometimes it does not flower very freely, particularly after a period of drought. Old plants do well for early summer-flowering, but for summer and autumn young plants from cuttings in autumn or division in spring are best. We would advise your trying plants from cuttings or division. If your soil is light, water well during dry weather. *Phacelia tanacetifolia* may be had of most nurserymen.

STRAWBERRY FORCING (Roland Quis).—In ordinary seasons the Strawberries would ripen in the frames by the second week in June. If to be fruited in a Strawberry house we would move them into it in the first week in May.

MUSHROOMS (W. S.).—We should judge by your description that the Mushrooms from the lawn are wholesome. Owing to the snow during the severest frost, we would not be surprised if Mushrooms came early out of doors this season. We should have been surer of the Mushrooms had you sent us a specimen.

SETTING THE BLOSSOM OF ORCHARD HOUSE PLUM TREES (C. P.).—In weather in which plenty of air can be admitted, we do not consider it necessary to use a camel-hair brush for either Plums or Peaches in our orchard house. As you have used it to the latter, all well, and if the weather is dull and sultry use a fan, or a thin flat board waved backwards and forwards among the trees; but with abundance of air, a fair amount of sunshine, and a gentle breeze, even this may be dispensed with.

TEMPORARY PROTECTION FOR BEDDING PLANTS (W. R. C.).—In ordinary weather your old druggist will be sufficient to protect the bedding plants in the box 9 feet by 6 feet, and 18 inches deep. In severe weather a little more may be required. The worst of the druggist is, that in a very cold or very wet day your plants would receive little light with the druggist on. We would prefer calico strained tightly. We have used calico, glazed when bought; we have used it rendered more transparent with oil and driers; but the result of our experience is, that it is best to use a cheap thin calico, unbleached, fix it on a pole at each end, and stretch it tightly by strings back and front. This we leave on night and day, until within a week or two of planting-out time. In your 9-feet length you would, in addition to the two ends, require three rods at equal distances crosswise in the centre, to keep the calico from drooping down to the plants. Your druggist would be useful in March, at any rate over the calico at night. 3½ yards, 2 yards wide, would do for your place. We will cover our cutting beds for some time yet with mats. In fact, for all hotbeds we generally cover until June.

POTATO SETS (Thunderbolt).—Drying the sets, but not so as to shrivel them, is a very good plan. If the place where they are grown is warm enough to induce them to sprout, all the better. Do not rub off the sprouts, but plant with the sprouts upwards. Such treatment promotes the early ripening of the crop, which is the best mode of avoiding the disease.

ACUCUA BERRIES GATHERING AND SOWING (F. J.).—The proper time to gather *Acucua* berries is when they part freely from the plant after having become quite red, and remained in that state on the plant for some weeks. They may remain on the plant for ornament until they begin to shrivel, when they will either fall or may be removed. Now is a good time to gather and sow the berries. Sow in light soil, and place the pot or pan in the greenhouse or in a mild hotbed. The vase, from what we have seen of it, is very strong; it is sold by Messrs. Hunt & Pickering, of Leicester.

FIXING CANVAS TO PROTECT WAIL FRUIT TREES (J. N. P.).—The way we fix our netting for protecting fruit trees is very simple. We have some larch poles sawn up into battens 2 inches square, and of such a length that they will reach from the ground to the under side of the coping, and be 1 foot longer than that—namely, for a wall 12 feet high the poles are 13 feet long. Holes are made in the ground 2 feet from the wall, and the pole introduced, the upper end immediately under the coping, and the other in the ground, making it fast by filling in with soil. The poles are fixed 3 feet apart, and all on the same slope, the foot of the poles being 2 feet from the wall at the ground. Small brass or galvanised iron rings are then sewn on the netting at top, the first at the end, and others at 18 inches apart along the upper edge. Galvanised hooks are driven into all the poles at top, and midway between each in the wall, small gas-pipe hooks being excellent. The rings are placed on the hooks, and the netting or canvas let fall. Two or three rings will be required at each end, and hooks in the wall to secure the covering to. If the covering reach to within 18 inches of the ground that will be sufficient. At every pole a ring should be sewn on the canvas, and a hook driven in every post, and so low that when the rings are placed over the hooks the covering will be drawn tight. The covering will be secure against wind, and be kept at such a distance by the poles as to prevent injury to the blossom. In uncovering the trees we first of all place a number of bricks upon the top of the wall, one at every 6 feet. After breakfast, if there has been frost during the night, and if there has been no frost, before breakfast, the rings are slipped off the hook along the bottom, and at the ends as far as can be reached. This done, we get upon the wall, and commence folding or rather rolling the covering up, and it is placed upon the wall, and bricks above it to prevent its being blown off. The covering is let down at night, and secured to the hooks, the whole being but the work of a few minutes to an active person. On frosty days the netting is not taken up.

ANTS ON A LAWN (Miss Harvey).—The best remedy is to place on it a hen with a brood of partridges, putting the hen in a coop close to a bush on the lawn. A brood of pheasants, or even chickens with the hen, near the spot will do much to keep down ants. If you do not like this you may sprinkle guano over their haunts, and it will drive the ants away. Ammoniacal liquor from the gasworks will also drive them away.

WIREWORMS IN CUCUMBER COMPOST (E. S. Y.).—We would advise you to scatter soot over the compost, commencing at one end to turn it, and sprinkling the soot over the compost as it is being turned. In addition to this we would make the holes 3 inches deep all over the bed, at about 6 inches apart, and drop in each one-fourth of a raw Potato. You may examine these twice a week, and you will no doubt find the enemy, and may then destroy it. The Potato baits will certainly keep the wireworms from the Cucumber plants.

ASPARAGUS FROM SEED (J. M. Dublin).—You may obtain as good beds of Asparagus by sowing the seed, and thinning the plants out to a proper distance, as if you were to put in plants. It is not necessary to transplant the seedlings; they will answer well left where sown for the permanent crops or beds.

PLANTS FOR SUSPENDED BASKETS (O. C. G.).—Pretty plants for suspended baskets in a vinery are *Alyssum variegatum*, *Nierembergia gracilis*, *Tradescantia zebrina argentea*, *Rhodochiton volubile*, *Thunbergia alata*, *Convolvulus mauritanicus*, *Lithospermum fruticosum*, *Saxifraga sarmentosa*, *S. Fortunei variegata*, *Lobelia Gordoniana*, *L. speciosa*, *L. faxoniana*, *ivy-leaved Pelargonium*, *Pelunias*, and *Heliotropes*. These will do well for greenhouse or cool vinery. For a heated or warm vinery we would have of Ferns (the preceding being flowering plants):—*Acerophorus hispidus*, *Pteris serrulata*, *Platynerium alciorne*, *Nipholobos rupestris*, *Nephrolepis exaltata*, *N. tuberosa*, *Microlepia hirsuta angusta*, *Adiantum assimile*, *A. setulosum*, *Davallia bullata*, *D. dissecta*, *D. canariensis*, and *Drynaria pustulata*, and *Lycopods*, as *Selaginella denticulata* and *S. coccinea*; of Orchids *Cymbidium aloifolium*, *Aceropora Loddigesi*, *Maxillaria Harrisoni*, and *Stanhopea oculata*, *tigrina*, *grandiflora*, *Devoniana*, and *saccata*.

SELECT PERENNIALS FOR A TOWN GARDEN (Idem).—*Alyssum saxatile*, *Ajuga reptans*, *Agrostemma coronaria* vars., *Adonis vernalis*, *Alströmmeria aurantiaca*, *Iberis saxatilis*, *Iris reticulata*, *I. germanica*, *Lilium colchicum*, *candidum*, *martagon*, *chalcidionum*, and *hancifolium* vars.; *Hepatica angulosa*, *H. triloba* in variety, *Lychnis Haageana* and its variety *splendens*, *Lythrum roseum superbum*, *Mimulus ruscus pallidus*, *Paeonia alifolia* and *officinalis*, *Polmonaria corniculata*, and its variety *variegatum*, *hercaceous Phloxes*, *Polmonaria corniculata*, and its variety *variegatum*, which is the finest of all hardy variegated plants, *Primula acaulis*, double lilac, purple, crimson, white, and sulphur varieties; *P. auriculata* vars., *Pulmonaria officinalis*, *Pyrola* vars., *Salvia nemorosa*, *Scilla sibirica*, *Spirea filipendula plena*, *Thalictrum aemoneoides plenum*, *Trollius europaeus*, *T. napellifolius*, and *T. asiaticus*, *Tritoma Burchelli*, *T. nvaria* and its variety *glaucescens*, *Tussilago farfara variegata*, *Vincula elegantissima*, *Hesperis matronalis flore-plena*, *Geum coccineum grandiflorum*, *Fritillaria imperialis*, *Galanthus nivalis* and *G. plicatus*, *Erigeron grandiflorus*, *Draba aizoides*, *Dodecatheon meadia*, *Dielytra spectabilis*, *Pinks*, *Carnations*, and *Picotees*; *Delphinium formosum*, *D. Belladonna*, *D. alopecuroides*, *Convallaria majalis*, *Chrysanthemums*, *Cheiranthus Marshalli*, *Campanula aggregata*, *C. pulla*, *C. carpatia*, *Aubrietia deltoidea grandiflora*, *Antirrhinum*, *Columbines*, *Anemones*, *Arabis albidia*, and *A. bellidifolia*.

COLEUS VERSCHAFFELTI (A. Subscriber).—The plants you saw at Kew were in all probability this. It is extensively used there, and beds of it edged with *Cineraria maritima* have a charming effect. *Coleus* out of doors shows little, if any, yellow in the colouring of its leaves, it being much better and darker-coloured out-doors than in a house.

LAPAGERIA ROSEA CULTURE (Idem).—From seed, plants flower about the sixth year, and young ones now obtained will not flower to any extent until they are four or five years old. Turfy peat is the most suitable compost. You will find full particulars in No. 357, page 90, to which you are referred for treatment.

ELIGHIA SAPIDA (Idem).—*Elighia* or *Cupania sapida* (Akee-tree), is an evergreen tree attaining a height of 30 feet. It is a native of Guinea, and has been transplanted to the West Indies and South America. The fruit, which is highly esteemed in Africa, is reddish or yellowish, about the size of a hen's egg, and with an axil of a very grateful sub-acid flavour. The flowers are white. In this country it requires a stove temperature, and a compost of rich turfy loam.

SULPHATE OF AMMONIA (H. S.).—The chemist is quite right, a solution of sulphate of ammonia so strong would kill the slugs, and might be used for the purpose on vacant ground, but it would kill plants. We are not aware that the paragraph you mention appeared in our Journal.

PAPER ENVELOPES FOR FLOWER POTS (I. I. W.).—These are sold by the Association for Promoting the Welfare of the Blind, 210, Oxford Street, and 127, Euston Road, London.

LIME WATER (Julia).—If you look in the "Cottage Gardeners' Dictionary," which you refer to, you will find the information under the head "Lime Water."

OILING TREES (B. H.).—Painting the trees with train oil, including the buds, was a great mistake. We would, as you suggest, soak the buds well with a solution of washerwoman's soda, and the next day syringe them with water.

FERTILISING ACUCUA JAPONICA.—"F. H." would be obliged by Mr. Sayers, of Rockville, stating what is the utmost distance at which a male *Acucua japonica* might be placed from the female plant with a fair chance of success.

NAMES OF PLANTS (J. C.).—Your *Rhododendrons* are all florists' varieties, and we cannot undertake to name them. (*H. Dalton*).—We cannot undertake to name Hyacinths or any other florists' flowers. They are too numerous and so slightly differing. (*Durham*).—1, *Justicia assergens*; 2, *Dadalucaanthus* (*Erauthemum*) *nerosum*. (*H. M. E.*).—*Cheilanthes birta*. (*J. B.*).—1, *Aphelaxis humilis*; 2, *Centradenia rosea*; 3, *Acacia argyrophylla*. (*P. S. M.*).—*Lonicera*, probably *L. biflora*, but specimen too young to be certain. (*W. F. H.*).—*Narcissus jonquilla*. (*Improve*).—1, *Acacia leprosa*; 2, *Geuista canariensis*; 3, *Better specimen required*; 4, *Coronilla coronata*; 5, *Geuetychia triplicata*; 6, *Polygala oppositifolia*, var. *grandiflora*. (*J. T. Sinclair*).—*Lathra autumnalis*. (*B. C. H.*).—You must send a flower as well as a leaf of the *Spirea*. (*Nemo*).—We cannot name plants from mere leaves. If your Japanese seedlings flower, and you send us specimens of the flowers and leaves, we will endeavour to identify them.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending March 17th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 11	29.988	29.162	51	36	45	44	S.	.14	Densely overcast; cloudy, rain; very boisterous.
Thurs.. 12	29.731	29.500	56	44	46	44	N.W.	.01	Clear and fine; fine; slight rain; fine at night.
Fri... 13	30.129	30.025	56	45	47	44	S.W.	.00	Densely overcast; overcast; cloudy; fine at night.
Sat... 14	30.244	30.154	53	28	47	44	S.W.	.01	Overcast; drizzling rain, overcast; fine.
Sun... 15	30.127	30.109	55	30	48	44	W.	.00	Clear and fine; fine; very fine at night.
Mon... 16	30.048	29.924	50	35	48	45	S.W.	.00	Slightly overcast; cloudy; fine, very boisterous.
Tues.. 17	30.012	29.829	54	30	48	45	W.	.00	Clear and fine; slightly overcast; fine, cold wind.
Mean	29.949	29.815	53.57	35.42	47.00	44.28	..	0.16	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GAME FOWLS' TAILS.

GAME hens and cock chickens after fighting and being beaten always close and droop their tails, and carry their wings high up, while those that have just beaten them carry their tails up and fanned, and have their wings lowered and shielding their thighs, which is their most spirited attitude. Game fowls that habitually carry their tails low and folded, and their wings too high, are generally of a quiet and tame disposition.

My remarks on the whip and switch tails are in Nos. 300, 302, 324, and 328 of the Journal, and this, if "EXETER" had perused them, he would have known as a matter of course.

As to fighting qualifications the form of tail is, perhaps, of the least importance of any one of the qualifications, and at exhibitions great neatness seems to be chiefly aimed at in the form of tails. I look chiefly at the fighting qualities, and care little for exhibition birds in comparison, and still less for the judges' awards, unless they are really well-known first-rate Game judges.

I may also here deny the statement made by "EXETER," that I acknowledge Brown Red cocks with black-marked breasts, and black-bodied Brown Red hens, to be the general favourites. I never stated this at all, though at the last Birmingham Exhibition I believe the black-bodied Brown Red hens took all the prizes in their class. I think, on the contrary, that the Brown Red cocks with the brown-streaked red-brown breasts are the favourites, and next, these with clear red-brown breasts; and that the pencilled dark Brown Red hens are in general the favourites, striped-hackled of course. Black marks on a Brown Red cock's breast show the Black-breasted cross in them, and are, undoubtedly, a sign of impurity. The pencilled Dark Brown Red hens are also in my opinion much more beautiful if with the coppery-red dark hackles than any black-bodied hens, and so many others think. The black-bodied Brown Red hens with the yellow hackles are also inferior to dark-red-hackled hens; both are striped-hackled of course. The willow-legged strains of the Brown Reds are also cross-bred mongrel birds from the Black-breasted willow-legged breeds, and are inferior in hardness and gameness to the blackish-legged strains. The willow-legged Brown Reds appear to be coming into fashion at exhibitions, and although too soft are often fast birds, though none of them true-bred Brown Red Game.—NEWMARKET.

HENS LAYING IN WINTER.

I BELIEVE hens will usually lay in winter if well fed. Good barley, tail wheat, and white peas, will assist them. In Sussex, where chickens are raised all the year round, the farmers' and cottagers' wives make their hens lay by liberal feeding. Even if pullets lay, they do not care to sit their eggs. The hens need not be very old, I have several laying now, and some sitting. I do not keep mine so well, as I do not rear chickens for the market. Mine have a gallon of barley in the morning, divided among Ducks, Turkeys, and fowls, about fifty in number. I send to the mill two bushels of oats, and one of barley, and have them ground together; this, mixed with bran or pollard, makes a good meal for the afternoon. It is best given warm, wetted with hot water, or water that has been used for cooking purposes.—L. B.

ACCRINGTON POULTRY SHOW.—We have received a prize schedule of the Poultry Exhibition that will be held in the

first week in April, and it proves to be a very liberal one. To each class there are three prizes of 30s., 15s., and 5s., respectively; but to the class for Single Game cocks there are to be awarded a silver cup of five guineas value, or the money, and £2 and £1 as second and third prizes. To the Single Game Bantam cock class will be awarded £5, £2, and £1, and to the best pen of Hamburgs of any breed, a silver cup of the value of three guineas. In the Pigeon classes the prizes will be 10s. and 5s. to each variety. The rules state "all poultry and Pigeons will be exhibited under cover, on the same elevation, and in equal light; and all prizes will be paid within seven days of the Show." Under such favourable provisions we may anticipate the entries will be numerous, and the quality of the birds superior.

SOMERSET COUNTY POULTRY ASSOCIATION—EXCESSIVE RAILWAY CHARGES.

"BRAHMA" in an article in your Journal of the 12th inst., denies the correctness of my statement of the 5th inst. I beg again most distinctly to state, that "BRAHMA" was not charged 5s. 3d. by the Somerset County Poultry Association for the conveyance of his fowls from the railway station to the show-yard.

I paid the Bristol and Exeter Railway Company £15 18s. 7d. for the carriage of fowls to the Exhibition, the said amount being charged in 261 different items; and from the accurate mode in which their accounts were rendered, I find that each item so charged had reference to the number on the respective hampers, and some for further reference contain the name and address of the reputed owners. I have before me the railway company's receipt and in it I find the following entry, "Baskets of poultry from Paddington to Weston-super-Mare (name of owner which we will call "BRAHMA"), 4s. 11d., and for delivering and collecting 4d.—5s. 3d.

I challenge "BRAHMA" or any other exhibitor of fowls at our late Show, to prove that the smallest named fraction of a penny has been charged them by us beyond what is charged in the railway company's receipt. If there has been any excessive railway charge, the aggrieved parties have a redress by making application to the Bristol and Exeter Railway Company. I have offered various exhibitors to help them to get repaid, if they will send me a receipt that the carriage was previously paid by them, but not one has done so. "BRAHMA's" idea that my not replying to Mr. Percivall's article confirms the truthfulness of Mr. Percivall's statement is absurd, the charges made upon Mr. Percivall and "BRAHMA" were under precisely similar circumstances.—BENJAMIN COX, *Hon. Secretary*.

[Here this controversy must cease from our columns. It is now a mere personal matter.—EDS.]

PRIZES FOR DUCKS.

I NOTICE in your impression of February 13th, a complaint respecting the preference shown by the Judges in awarding prizes to the ornamental varieties of Ducks over the useful. Poultry shows profess to be for the improvement of all kinds of domestic poultry, and this is generally so stated in the schedules. This being the case, are judges justified in giving prizes to those fancy Ducks which are not domesticated, and leaving out the domesticated and useful kinds, such as East Indian, Grey and White Call, &c.?

At Manchester they have a class for Ornamental Water Fowl, and if other shows would add such a class (either domesticated or undomesticated), I think it would meet the require-

ments of the case, as there is no denying they are very beautiful, and a great attraction in any show; but so long as committees of shows offer prizes only for domesticated poultry, let domesticated poultry have the prizes.—G. K.

A GUIDE TO CANARY BREEDING.—No. 2.

BEFORE proceeding to put up breeding stock, a few words about breeding cages.

The most useful for all purposes are what are called "two-couple" cages—that is, containing two compartments. Many breeders use cages with a greater number of compartments than this, ranging from ten to twenty or more. Such cages are, however, nothing more than a multiplication of the smaller one, with the disadvantage of being more cumbersome. It is, perhaps, only a question of taste, but the smaller cages have the advantage of being more easily moved, and more readily cleaned—a great desideratum. The simpler the construction the better. To a practical man there is a wide difference between the appearance of a cage which looks like business, having every necessary appliance but no more, and one which, while it may be a creditable specimen of the cabinet-maker's skill, is only a useless ornament, altogether unfitted for the purpose for which it is intended.

The best cage is simply a box 3 feet long, 18 inches high, and about a foot from back to front, divided in the middle in the direction of its width by a fixed or moveable partition, having a small door in the centre, which, revolving on a single screw, will open or close an aperture serving to connect the two compartments. The door of each division should be made large enough to admit the hand and allow it free motion in the inside for the purpose of whitewashing, an operation necessary at the beginning and end of each breeding season. A still better plan is to have the front attached to the cage with screws, so that it can be removed at pleasure, a method which affords greater facility for thoroughly cleansing than by means of the door.

The wires may be half an inch apart. There must be a water hole at either end, and four seed holes in the middle, two on either side of the partition, giving access to the seed hopper, which must in the first place be covered so as to prevent the birds throwing out the seed, and also be divided into two parts by an upright partition, as the cocks, being very pugnacious while the hens are incubating, will exchange a passage of arms through the seed holes, if they can reach each other. There are a great many contrivances for seed hoppers, all more or less ingenious. Simplicity is, however, a great essential. The main objects to be attained are a regular and certain supply of seed, so protected that it cannot be wasted, and still accessible to the bird without injury to its head, an important matter with crested birds. A sliding bottom to the cage, with a raised rim to hold the sand, with which it should be freely sprinkled, will be found a simple and clean arrangement.

Having procured such a box, proceed to give the interior a good thick coat of whitewash, formed by mixing common whitening and milk—a mixture which will not easily rub off. Be very careful to fill every crevice. This is of extreme importance, as the red spider, a parasite which persecutes the Canary more or less at all times, but particularly when nesting, and which is the great bugbear of breeders, to exterminate which is their constant aim, and to effect which object various nostrums are prescribed, will establish itself in countless numbers in the minutest cracks, leaving its hiding places after night-fall to prey on the very life blood of the young birds, and retreating to its fastnesses at break of day. Having whitewashed the interior, coat the edges of the box thickly, and white each screw in the front, taking care that it fits closely, the whitening acting as a cement behind it.

The rest of the apparatus consists of nest boxes of various sizes. Wooden boxes are most in vogue in the south; in these the hen will construct her own nest from a supply of moss and doe hair, which must be furnished her. In the north, however, tin nest boxes fitted with artificial nests of felt are generally used. A few egg troughs of tin or earthenware, a box about 6 or 8 inches square and 2 deep, having a bottom of perforated zinc for passing hard-boiled egg through a piece of felt such as is used for stuffing saddles, and a bath, which is a small cage about 8 inches square, entirely open on one side, and containing a zinc or earthenware trough, with, a few water fountains, about complete the necessary appliances.

A few other trifling accessories may suggest themselves as occasion requires, but with these necessities the beginner may "put up" his birds, one pair in each compartment, giving them in addition to their usual supply of food (which should be a mixture of Canary seed and summer rape, with occasionally a little linseed, millet, or maw seed by way of variety), a little chopped egg and crushed hempseed every day. This being very stimulating assists in getting them into high condition.

A nest formed by cutting a piece of felt into a circular shape, and splitting it in halves, as it would otherwise be too thick, should be tied into a No. 1 size nest box, and the tin suspended by a small nail at the back of the cage between the two perches, which, by the way, should not be like those small affairs sold in ornamental song cages by ironmongers, but nearly half an inch square, and only slightly rounded off at the edges, affording the bird a secure resting place for its food without having to contract its toes in an unnatural way to grasp the perch.—W. A. BLAKSTON.

LIZARD CANARIES.

AFTER perusing Mr. Blakston's very sensible remarks on Canaries, I would like to ask the opinion of fanciers how to determine the essential qualities of a show bird in the Lizard classes, and I believe I am right when I state that no other variety of Canary is so imperfectly understood, or regarding which there is so much diversity of opinion among fanciers. I would receive thankfully the opinions of fanciers on the following questions, and also any extra remarks.

1. Is depth of colour as much an object in Lizard as in Norwich or Cinnamon Canaries?

2. Is a bird with golden spangles intermixed with silver, or silver-tipped spangles, to be considered a show bird; and in which class ought it to be entered—gold or silver, or neither?

3. In what class should a bird be entered that in ground or body colour is almost yellow, with a cap as high in colour as one of the best Mealy Norwich cocks, yet its spangles are all silver?

4. Is it a fault or point of excellence for a Lizard to have a spangled appearance on the breast as well as on the back?

In the latter part of 1866 a friend of mine had two Silver-spangled Lizard cocks, both good-sized and excellent birds, of about equal quality in size and regularity of spangles, and each bird had well-shaped caps; I will term them Nos. 1 and 2. No. 1 was a bird of a good buff colour on body and cap. No. 2 suggested my third question, for the ground or body colour was a very high mealy colour, almost as good as a yellow, with a cap as high in colour as a prize Mealy Norwich cock. The birds were exhibited four times together in one class at some of the very best shows, the bird No. 2 taking the first prize on two occasions. There were different judges at each exhibition. On the other occasions on which they were shown No. 1 was very highly commended at one show, and took a prize at the other show; but in both cases No. 2 was not even commended when one of our most noted judges officiated, though at each place assisted by different persons. On one of the latter occasions the bird had the appearance of having been tested, to ascertain, I suppose, if the colour was spurious. These two Lizards have been exhibited many times besides those above mentioned, when I believe I am right in stating they always took prizes.

I noticed a Lizard last season, that with the exception of having both gold and silver spangles on its back, and with body colour of a palish yellow, is, in my opinion, a very good bird, and has taken prizes at some of our largest shows in the Golden Lizard class. This bird comes under my question 2, yet I do not think it can be termed a Golden-spangled Lizard. R. HAWMAN, 94, Marston Road, Middlesbrough.

CONSEQUENCES OF MISMANAGEMENT.

MAY I ask if you think it desirable for me to feed my Ligurians now, as I find them very weak? I have never had any honey from them, and I should have thought they might have collected honey enough last season to keep them till summer again, as the English bees have done, but I am rather frightened about them.

The English bees are now working well, but those horrid Ligurians only come out in the finest part of the finest days. They appear to be few and languid. As they cost so much, and are said to be so good, I should like to keep them if possible, hoping for better times. Why are they so much more

lazy than the old John Bulls? Are they very tenacious of cold? It is very tantalising to hear of their doing so well with other people, and so badly with me, and they have been well treated. They swarmed three times last summer, very weak swarms, two of which are dead.—S. S., *Tiverton*.

[You have omitted to state that you last year drove a large artificial swarm from those well-treated (?) Ligurians at a time when they were unable to provide themselves with food, and then suffered them with the original and pure queen at their head to perish miserably by starvation! From this ill-advised proceeding have arisen all the subsequent misfortunes of which you now complain; the stock, which was at the outset an amazingly strong one, having been completely ruined by mismanagement. If it now possesses a fertile queen, something may yet be done to promote breeding by the judicious administration of food, but the recovery of a colony which has once been reduced to so low an ebb can at the best be but slow, and the ultimate result is extremely uncertain.

To satisfy yourself that the present languid condition of the Ligurians is entirely owing to paucity of numbers, and not to their being susceptible of cold, you have only to recall to mind their energetic activity at this season last year. It was unfortunate that the stock should have swarmed naturally after the forcible abduction and destruction of its ill-fated queen, and the great bulk of its hapless population, but such swarms must necessarily have been very weak and could scarcely be expected to survive the winter. They should, indeed, have been at once returned to the parent stock, which in this case might probably have recovered from the effects of your previous ill-judged manipulations.]

BEES NEGLECTING ARTIFICIAL FOOD— PRUNING COMBS, &c.

Why do my bees refuse to feed now? They have not much honey—not more than 2 or 3 lbs.—and yet they are very active, not at all weak in numbers for the time of year, being almost as strong as they were at the commencement of winter. I feed them with loaf sugar and water, and yesterday I smeared the feeder with some peppermint water, thinking the smell might attract them to it, but all to no purpose. Do you think the bees can get any honey from the flowers yet? We have only the apricot trees in blossom, though pear trees are nearly ready to flower. The bees carry also a good deal of pollen into the hive, which I think they have from the elms.

What do you think of the mode of cutting-out comb in the spring as practised in Russia? Do you think it is of any use, or does it only give the bees extra trouble?

Can bees be placed near a house without causing trouble? Are they likely to come into the rooms?

Do bees thrive as well in an open space as under the protection of a wall or hedge?—CAROLUS.

[The fault is not in the food, but in the mode of administering it. If you discard your present feeder, and adopt the inverted bottle, your bees will speedily emulate our own, which are now appropriating food in any quantity that we think fit to indulge them with. Bees cannot as yet collect sufficient honey to maintain themselves, although in exceptional seasons we have known them build combs in March. It is so very seldom advisable to prune combs in spring that it is better entirely left alone. Bees rarely enter rooms, except by accident, unless enticed to do so by the exposure of honey or other sweets. There is no doubt that they thrive better in a sheltered than in an exposed situation.]

FORMING AN ARTIFICIAL SWARM IN A UNICOMB HIVE.

I HAVE an empty unicomb hive into which I wish to introduce an artificial swarm: would you let me know how soon I can set to work? I wish to put a piece of brood comb for a Ligurian hive into the unicomb hive, and place it on the old stance of a black hive in order to make the black bees rear a Ligurian queen, and after the bees are settled in the unicomb hive, and the queen has been raised, I wish to remove the hive into the conservatory. Do you think this plan will succeed?—ALFRED FINDEISEN.

[The proposed experiment is very unlikely to succeed, as a unicomb pure and simple is the worst possible hive for the

operation. Your best plan will be to have the unicomb hive fitted with moveable comb-bars in the manner first invented by Mr. Woodbury, get a box made to take these bars ranged side by side in the usual way, and in this make your artificial swarm early in May. As soon as the young queen begins egg-laying, the combs and bees may be shifted to the unicomb. When removing a brood comb from the Ligurian stock for the purpose of forming an artificial swarm in the manner you describe, you should take with it the adhering bees, but make certain that the queen is not amongst them by first ascertaining her presence on another comb. The box should also be furnished with worker combs, for if any are built before the queen is hatched they will be sure to be drone combs. "The Gardener's Almanack," which contains Mr. Woodbury's Bee Calendar, may be had post free from this office for thirteen stamps.]

OUR LETTER BOX.

BOOKS (*D. Williams*).—Brent's "The Pigeon Book." You can have it free by post if you enclose twenty postage stamps with your address.

SPRING CHICKENS—FOWLS (*Georgie*).—Spring chickens should be about twelve weeks old when killed, fowls from sixteen to eighteen weeks when put up to fatten. Fowls will grow more and become more mature in fourteen weeks in the spring and summer than in eighteen in the winter.

CRÈVE-CŒURS (*Young Beginner*).—Fowls without beards are not Crève-Cœurs. They should be square, short-legged birds, with top knot and beard, and small comb in front, resembling somewhat a cloven heart. They take their name from it.

MARKING FOWLS—BUCKWHEAT FOR POULTRY (*Tyro*).—The best plan of permanently marking fowls is to perforate the web of the wing with a red-hot iron. Buckwheat is not good food for fowls, nor do they like it. They like nothing of an oleaginous nature. Asphaltum is a very bad thing for the flooring of a poultry house and yard. Birds will never do well upon it, nor will they be healthy.

HATCHING GEESSE—KERRY COW (*Z.*).—A hen would hatch a Goose's eggs, although she would have to incubate nearly a week longer than if sitting on her own eggs. They ought to be sprinkled with water daily. A Kerry cow would repay you, if you have the conveniences and keep useful for a cow of any kind; but you should keep two.

ULCERATED INTESTINES (*Canker*).—What is called in Staffordshire "canker" in fowls, is an ulceration of the intestines and other viscera. There is no medicine known to cure the disease. When a fowl mopes about, the only chance of saving it is by giving bread soaked in ale to keep up the bird's strength. If the ulcers become numerous there is no hope.

BUCKWHEAT (*A Constant Reader*).—Buckwheat may be purchased of any of the principal seedsmen who advertise in our columns. It is sown in May.

FOWLS VERY FAT (*Trotters*).—Poultry if kept too fat will not lay, and, perhaps, the introduction of a young and lively cock in perfect health, about two years and a half old, would give a good supply of eggs. Giving fowls too much barley is as bad as giving them too little. Give them a change of food—oats, barleymeal, and green food, such as lettuce, hoiled carrots, and parsnips; also scraps of animal food about twice a week. Mashed potatoes mixed with a little bran are good as a change of diet.

POULTRY BREEDING.—We have received Mr. Volkman's reply to Messrs. Ure and Stuart, but through pressure of other matter we are unable to insert it in this number. It shall appear next week.

PIGEONS (*J. Spence*).—You will see in our columns by degrees the information you need. If you consult "The Pigeon Book," which you can have from our office free by post if you enclose twenty postage stamps, you will find what you require about Jacobins.

PARROT WITH TUMOUR (*H. T. Toy*).—For the Parrot having a tumour under its eye we fear there is no immediate remedy. It may be from cold, or through the bird having pecked the brass of the cage, or that the feeding boxes have not been properly cleansed. Give it some bread and milk, scald the bread first, also a few chillies, and if it will not eat them sprinkle a small quantity of Cayenne pepper amongst the seed. Touch the parts of the eye and tongue affected with warm water two or three times a day, using a camel's-hair brush, and about an hour afterwards with a little cold cream (which is to be had at any chemist's), not sufficient for it to swallow. Give it also a piece of bread soaked in very weak rum and water; also try a little warm tea, and give plenty of fresh water.

CANARIES SINGING (*Trotters*).—Cock Canaries hatched in July last ought now to be getting into song, if they have been kept in a room with other singing birds, but if they have been kept by themselves they would only twitter a little. The throat of a cock swells when he twitters, but that of the hen very little.

POULTRY MARKET.—MARCH 18.

Our supply of poultry becomes daily less. The winter birds are getting hard. The birds of this year are not forward enough. We hear good accounts of the early broods.

	s.	d.		s.	d.		s.	d.
Large Fowls.....	4	6	5	0	0	Pheasants	0	0
Smaller do.	4	0	0	0	0	Partridges	0	0
Chickens	3	0	3	6	Guinea Fowls	3	0	
Goslings.....	7	0	7	6	Hares	0	0	
Ducklings	4	6	5	0	Rabbits	1	4	
Pigeons	0	8	0	9	Wild do.	0	8	

WEEKLY CALENDAR.

Day of Month	Day of Week.	MARCH 26—APRIL 1, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
26	Th	Meet. of Royal and Zoological Societies.	51.5	32.2	41.9	16	50	af 5	22	af 6	5	af 7	55	af 8	2	5	38
27	F	Meet. of Quekett Microscopical Club.	53.7	34.2	43.9	14	48	5	24	6	35	7	5	10	3	5	20
28	S	Royal Hort. Society, Opening of Mr. W. 5	53.0	34.2	43.6	17	45	5	25	6	7	8	16	11	4	5	2
29	Sun	Anniversary Meet. of Chemical Society. 1	53.8	33.7	43.8	13	43	5	27	6	45	8	12	10	5	4	43
30	M	Meeting of Institute of Civil Engineers.	53.8	34.6	44.2	18	41	5	29	6	31	9	23	0	6	4	25
31	Tu	Meeting of Society of Arts.	54.9	34.3	44.6	18	39	5	31	6	27	10	23	1	7	4	7
1	W		54.8	34.1	44.5	21	36	5	32	6	31	11	18	2	8	3	49

From observations taken near London during the last forty-one years, the average day temperature of the week is 53.6°; and its night temperature 33.9°. The greatest heat was 75°, on the 27th, 1830; and the lowest cold 16°, on the 1st, 1838. The greatest fall of rain was 0.76 inch.

RAMBLINGS IN GREENHOUSE, GARDEN, AND WOODS.



I CAN testify to the soundness of the advice given to "A SUBSCRIBER" in the Journal of the 13th ult. relative to striking cuttings over a flue. If he carry out the instructions there given, I am sure he will acknowledge the usefulness of such a miniature propagating house. I have a similar place in use here. The flue from a plant stove runs across the end of a span-roofed greenhouse. The greenhouse stage is flat, and

about 18 inches above the flue. From the floor up to the stage is closely boarded, enclosing the flue. The whole of the heat is thus directed upwards through the stage, on which is placed a glass case, opening at the top with a hinge. A few slates are placed inside to prevent the sawdust, in which the pots are plunged, falling through the stage. The heat communicated is abundant and sweet; scarcely anything which I put in fails to strike quickly; in short, the place is invaluable, always ready for work, and the heat quite under command by simply having a slide in the boarding which encloses the flue. Water must be poured on the sawdust to keep it uniformly moist: a mere sprinkling on the surface is not sufficient. Avoid dryness at the bottom of the sawdust, and success is certain. I may add that the house in which this case is placed is always gay with flowers, and so far from the case being an eyesore, its manifest utility claims a meed of praise from all visitors, who ever evince an interest in its crowd of little occupants, and the progress they make from day to day.

I will now take a ramble in the open air, and spend a few minutes amongst Potatoes. I can offer no remedy for the disease. The mystery remains as profound as ever. Observation of the time of the visitation of the disease, however, has been of some use to me. Of the varieties of Ashleaf I have taken up for seed, I may safely say that for the last eight years not more than 1 per cent. of the tubers has been affected with the murrain. I took my cue from an old shoemaker, who for many years prided himself on producing early Potatoes a week before his neighbours. His secret was this:—"Take them up when the tops are quite green; never mind their slipping their skins, they will soon grow new ones." "Will they keep if treated thus?" was my first question. "I never had a bad one in my life," was his reply. "Come and see my stock." This was in a year when the disease was unusually virulent, and Ashleaves were nearly exterminated in the locality. I went to see, and believed. He alone in the village had a fine stock of healthy tubers. I have practised the method ever since, but each time leaving a few in the ground for experiment and observation. Every year has given the same results. Those taken up when the tops were quite green have kept perfectly sound, while those left longer in the ground, until the haulm died naturally, have rotted more or less according to the season. The idea of procuring an earlier produce by this plan I think but little

of. It is the man's fancy, and he has a right to exercise it. The keeping of the Potatoes is of greater moment, especially as the produce, as sets, is in no respect deteriorated. A village shoemaker's shop is a notable rendezvous; "chaff" there predominates, and the shoemaker was provided with a goodly share about his skinned Potatoes; but he has a victorious reply when their keeping properties are assailed. He then slyly opens his drawer, bringing out an old friend, with the observation, "Show me one older than this, then I'll give in." I saw this specimen three years ago. If he has it yet it is in its teens. There is no semblance of romance here. I believe the man is still living, and any one can have his address through the Editors, and they will find what I have stated bare uncoloured fact.

My plan is now this: About the second week in June, when the atmosphere is in a highly electrical condition, and a thunderstorm occurs, I take a scrutinising ramble amongst the crops, and when I detect the very first speck of disease on the foliage I take the Potatoes up at once, leaving in the ground a few only for daily use, or even if I see any disease in the neighbourhood the warning is sufficient, and I set to work immediately.

In 1866, when on a visit to a neighbouring gardener, I saw the disease undoubtedly at work. I took my main crop up the next day, and every tuber kept well; a few by the side of them, and left in the ground some time longer, went bad at the rate of 50 per cent. Last year I again took timely warning, and up to the present time I have not found one decayed tuber. A few I purposely left for observation—parts of rows from which the above had been taken—and the majority of them rotted either before or after being taken up.

I am led into this rambling by the remarks and queries of "HAWKINS" on page 149. I will now take text from the latter portion of his letter, and look at late-ripening kinds of Potatoes. My rambles here will be general, and to a great extent speculative. I am decidedly of opinion that the Onions had nothing whatever to do with the exceptional soundness of the Potatoes which had come up amongst them. I have seen Onions, intended for seed, grown amongst Potatoes, and the Potatoes were worse rather than better of their company. The immunity from disease I trace solely to the fact of the foliage not being allowed to develop itself until late in the season, and after the deadly scourge had in a great measure expended its activity. I have at various times planted exceptionally late, and the crop has in a great measure escaped the disease; but then the produce was poor, and the quality poorer. The natural inference from these remarks will be, that I believe the murrain to be communicated by atmospheric agency, and through the medium of the foliage.

The Potato, like most other plants in the early stages of its growth, is dependant chiefly on its roots for its supply of food. In the development of leaf-formation another all-important source of supply is unfolded. When the plant is in full vigour the leaves are performing important functions, not only in elaborating the sap obtained by the roots, but also in inhaling the constituents of the sur-

rounding atmosphere. It is by this means that the plant supplies itself with the requisites for its perfection; or, on the other hand, receives into its system elements directly inimical to its wellbeing. Thus its very efforts to sustain health and life may, and indeed do, often result in disease and death. Now, whatever the roots of plants may do in the matter, it is certain the foliage does not exercise a power of selecting atmospheric food. Plants can no more reject a poisonous inhalation than the collier can the noxious gas which proves so terribly fatal; but it is when the plants are in an advanced stage of growth that they receive the greatest injury from the poisonous state of the air which for the time being surrounds them. Their organs of respiration are then fully developed, and in active operation. In the absence of, or whilst these organs are imperfectly developed, which is the case when the plant is in its earliest stages of growth, it will in a great measure escape a passing atmospheric scourge. This has been demonstrated to most, or I may say, all gardeners. When the air of a dung frame is saturated with poisonous gases evolved during the decomposition of manure, and plants of any kind are put in, they will be speedily killed. But it is not the leaves lately expanded—the youngest and, as we might think, the most tender parts of the plants which are first injured—no, it is the fully developed foliage which first succumbs. It breathes the poisonous air, and death ensues. My attention was first attracted to this subject before I was the age of the shoemaker's Potato. It set me thinking, and I have continued to think and watch, until I imagine there is some analogy to the Potato disease here.

The cottage where I was born is now razed to the ground. If its date of erection was not antecedent to the introduction of the Potato into this country, it was at any rate sufficiently remote to warrant us in a belief that the site of the cottage had never produced a crop of Potatoes. Here, then, was a fresh piece of ground, and it was planted accordingly. The mud walls and rubbish from the building formed the soil, to which were added a few loads of sand. The crop was prodigious, but considerably affected with disease, except a few early Potatoes taken up in July, and a late-ripening pig Potato, which was also nearly exempt from it. Now, where did this disease come from? It could not well be in the soil—perhaps it was introduced with the sets. Well, it might have been so, though I do not think this was the sole cause, or why did not the tubers turn bad which were taken up early? The immunity from disease which late-ripening kinds seem also to some extent to possess is becoming more and more acknowledged. A fact not to be overlooked is, that the working classes and cottagers are generally discarding mid-season varieties for the greater certainty of sound crops of the later kinds. With them quantity is the primary consideration. Late Potatoes as a rule are inferior in quality. If Paterson's Victoria possesses all the excellencies which it is credited with, it is a step in the right direction. I know nothing of it, and so leave it and all the rest just for a short ramble in the woods, where so many of my boyhood's happy hours were spent.

I can confirm "A SOMERSETSHIRE PARSON'S" plan of sticking elder round the young trees to protect them from rabbits. The plan is effectual, and, fortunately, any other kind of sticks with which the ground happens to be strewn will answer well. My father was for many years woodman on an estate where some thousands of trees were annually planted, and the rabbits and their ravages were a constant source of anxiety to him. He tried several modes of protection, but sticking round the trees with whatever was most handy he considered the most effectual and economical plan. He considered it was only allowing a man six days to put in a given number of trees instead of five. The last time I looked carefully through a piece thus protected I did not see one tree injured. In this instance the sticks used were dead Larch and Spruce. This was his plan after thirty years' experience and anxiety.—J. W.

[We insert the above, but we totally dissent from what our correspondent says relative to plants inhaling noxious gases.—Eds.]

REMOVING LARGE TREES.

In compliance with Mr. Flitton's request, I have to state that I obtained much benefit by the use of old netting, such as has been used by fishermen, for wrapping up the ball of earth before attempting to move the plant, and securing the same by cords. By this means the ball is secure, and can be shifted without loss of soil; and in most cases the net may in part

remain on the ball, as it will soon rot away. I have found this advantageous in transplanting large Portugal Laurels, as they will not live if the ball is cracked or severed in the least degree.—WM. THOROLD, *Thorpe Bower, Norwich.*

BUSH FRUIT TREES.

THE letter of "C. C. E." (see page 198), is a word in season. How much I wish he had a thousand imitators, so that we might learn the great difference that soil, climate, and management make in the success or non-success of fruit-tree culture in gardens.

Before I go into further particulars I must promptly clear myself of what would seem, according to "C. C. E.," to be a little misrepresentation. I repeat with great confidence that an active man can lift and replant one hundred trees in a day. I have always made it a point not to report on any experiment till I had tried it. This was the case with the lifting and replanting of dwarf trees, for I found some years ago that one of my active labourers would finish off twelve in one hour, and so I modestly put the number at one hundred per day. I must, however, confess that when I saw the assertion of "C. C. E.," that it would require two good men to do the same work, I felt a little shaky, and quite thought that my memory had been at fault when writing the paragraph. I soon ended my trouble, for I at once called one of our active workmen, and told him to bring his treddle spade. This is an implement made here of enormous leverage, and with which, if I descended to hetting, I should back a man accustomed to use it to remove three trees while another with a "garden spade" would remove one. It is odd to find so near London so much of the old country customs and prejudices that exist in this neighbourhood. Our workmen's favourite Vulcan lives some four miles off, and although there are five smiths in this large parish, they declare that not one of them can make a good spade. This home-made spade is heavy, is always sharp, and by the clever workmen is wiped clean at night, and kept bright as silver on both surfaces. It measures 15 inches from its lower edge to the upper part of the treddle, and, consequently, can be thrust into the ground to that depth.

I must return to my tree. My man shouldered his spade and went with me to my one hundred trees of Cox's Orange Pippin Apples on the English Paradise stock, which have been planted six years and twice removed. I directed him—my watch in hand, unseen by him—to dig a trench a spit deep about three-fourths of a circle round the tree selected, and 9 inches from its stem, leaving a portion of earth solid. Into this solid portion, after digging the trench, he thrust his spade in a slanting position so as to go under the roots of the tree, he then with strong arm lifted it with nearly all its roots intact, for only two or three small ones were fractured. No root-pruning was required, for owing to the tree having been lifted two years ago its roots were compact. He then made a slight hollow in the place it was taken from, replaced the tree, trod the earth firmly round it, filled-in and levelled the loose earth, and not till then did I look at my watch to ascertain the time it had taken to do all that I have described. The hand was at ten when he commenced, and when all was finished it was exactly three minutes past ten, or as we now write, 10.3. (What a concentration of strength and energy there is in a skilful English labourer! I have never yet seen his match.) Well, the tree was, I repeat, finished in three minutes. Now, I wish to be liberal, and so I allow two minutes in the absence of "master" for back-stretching, and this will give five minutes for each tree, or twelve trees in an hour, and this is easy work; but it must be understood that it is only Pears on the Quince, Apples on the Paradise stock, and Plums, all under occasional removal, that can thus be operated on so quickly, their roots being compact and requiring no pruning. There is, however, so much difference in soils that it is difficult to estimate the labour required, for in some soils a tree left undisturbed for two seasons will make long shoots and long straggling roots, so as to require some care in lifting and replanting.

All the varieties of soils here, whether tenacious clayey loam, dark vegetable soil resting on gravel and clay, or light sandy loam resting on sand, are highly calcareous, and I feel almost assured it is owing to this that every kind of fruit tree is inclined to early fruitfulness if checked in its growth. Thus a vigorous "maiden tree" (a tree one year old), of a Pear on the Quince, or an Apple on the Paradise, or a Plum, if taken

up and replanted, say in March, will the following season be a mass of blossom buds, and destroy itself by overbearing. I have under my eye a border some 14 feet wide and upwards of 100 yards long, planted with bush Pear trees, one thousand in number. They are about 18 inches in height, were planted last March, and now every tree is a mass of blossom buds.

I must confess that my love for bush fruit trees increases annually. I admire a fine well-managed pyramid, of which I have a goodly number, but there is here a great evil attending their culture. Our Atlantic gales or westerly winds which blow over the whole surface of our little island of Great Britain with such intensity, and are unknown in the interior of the continent, are terrible disturbers of pyramidal Pears on the Quince stock, as these do not root deeply. I have some, now twenty-five years old, which if they were not supported by a stout prop on the eastern side of the tree would be nearly prostrated. These necessary props are hateful in my sight. A bush tree however old and loaded with fruit is never disturbed. I ought to add for the comfort of those who have planted pyramids, that those I allude to are planted in an exposed place with no sheltering hedge or wall.

With regard to the distance from each other that bush trees should be planted, the matter is quite worthy of consideration; very fortunately I am able to throw some light on the question, owing to my having some plantations of bush Pear and Apple trees from ten to fifteen years old. In another place I have recommended a sort of nursery fruit garden, the trees, Apple bushes on the Paradise, to be planted 3 feet apart; or in case the plan were carried out extensively by market gardeners, to plant the required number of stocks, 4840 per acre, and to graft them.

It is now six years since I carried out the idea by planting one hundred Cox's Orange Pippin Apple trees on the English Paradise, 3 feet apart, row from row, and 3 feet apart in the rows, intending to carry out my suggestion of removing every alternate tree at the end of seven years, and after the lapse of a few more years to remove every alternate row so as to leave the trees 6 feet apart as the permanent distance. I have just looked over this plantation, and find that the trees that have been twice lifted are compact and will soon be perfect nosegays of blossom. They may to a certainty remain two more years before there will be any necessity to remove every alternate tree to a fresh plantation. This will make a period of eight years in which they have remained 3 feet apart without being crowded, so that I was quite correct in my suggestion that bush trees could be planted at the above distance with a good result. I ought to mention that this close planting is better adapted for very small gardens, and for market gardeners who would wish to have their ground occupied with fruit trees without any intermediate crop.

I ought to tell everything pertaining to my experimental plantation, and must refer to one row of trees in it. These have been lifted only once, they are full of blossom buds, but are double the size of the others, and must be thinned-out next autumn by removing every alternate tree. In another plantation of bush Apple trees, four hundred in number, sixteen years old; and in a plantation of bush Pear trees, five hundred in number, ten years old, the trees are 4 feet apart in the rows, and 4 feet apart row from row, and this I believe to be the proper distance to plant bush trees in gardens, unless it is wished to crop between the rows and to allow the trees to grow without being occasionally lifted, and then 6 feet will be the most eligible distance.

The mode I have adopted with the above plantations is to lift any tree that seems inclined to grow vigorously, and not show symptoms of bearing, leaving those that grow more slowly unmoved for three, four, or more years, or till they are inclined to make growth rather than fruit. I have reason to believe, from long observation, that the occasional removal of garden fruit trees tends greatly to their well-doing in this country; or, as a pomological friend writes from the north of England, it is the "life and soul of fruit culture." With some kinds of trees and in some soils root-pruning without lifting is equally efficacious; but while writing the above I have had in my mind only such fibrous-rooted trees as Pears on Quince stocks, Apples on English Paradise Stocks, and Plums.

It may give some gleam of comfort to "C. C. E." to be told that in 1866 I had but a scanty crop of Cox's Orange Pippin on my bush trees, and in 1867 not a single fruit. They were masses of blossom, but the frost of May 25th destroyed all. The scourge was so effectual that, although I have in some seasons had from two to three hundred bushels of Sturmer Pip-

pins, last year not a fruit was gathered; in fact, I never saw one. It is very charming and hopeful to see the fruit trees this season so crowded with blossom buds; but alas! we must bear with our uncertain but healthy climate, the glittering blossoms may and probably the greater portion of them will, be cut off. One seems almost to envy the climate of the French gardeners, who, towards the south-western districts of France, have but little anxiety about their fruit crops.

With respect to diagonal cordon training on wire fences, the height of 4 feet is given as the minimum, to be increased according to position. Here it seems to be a pleasant height for the cross walks in the interior of a garden, as it does not interrupt the view. For a boundary in any convenient place, 8, or even 10, feet is not too high. I am a great lover of fruit-tree culture in all its modes. I delight in all the cordons, except the single lateral, which now always seems to me incomplete, and I feel a mischievous tendency to paraphrase Pope, and say, Each branch should have its brother; but my great and increasing love is for bush Pear trees on the Quince stock, ditto Apples on the Paradise, and Plums, they are all so easily managed, and their blossoms protected. The trees, as is well known, have no leaves while in bloom—give them leaves in the shape of dry hay or branches of evergreens.

If "C. C. E." would kindly give the nature of his soil and subsoil, and the site of his plantation, whether high or low, also whether he lives north, east, south, or west from London, he would add much to the value of his communication.—THOS. RIVERS.

WHY ARE AURICULAS NEGLECTED?

As a lover of the Auricula, and one of that select few who grow the flower, I think I have a just cause of complaint against our two great Societies for the manner in which it has been this year treated. Some few years ago it was becoming almost an unknown flower. About the metropolis there were a few who grew it. The mantle of poor John Dickson, of Acre Lane, had fallen upon Charles Turner, of Slough. Mr. Butcher, of Camberwell, and others still retained their love for it, though General Tom Thumb and other vulgarities had so pushed Auriculas on one side, that people were almost ashamed to acknowledge that they grew a collection of them; but the spring exhibitions of the Royal Horticultural and Royal Botanic Societies once more introduced them into notice. The prizes offered were indeed small, but they acted just as a sufficient stimulus to induce growers to come forward. We had our boxes made for bringing the plants up to the exhibition, and we were rewarded by seeing the interest shown by nearly every one who took the trouble to examine them. Then we had the National Exhibition of Auriculas, which brought together growers from north, south, east, and west, and for many years such a sight had not been seen in London. Well do I remember the unfeigned astonishment of the visitors, who asked what could these flowers possibly be. And I do not wonder at it. There is no flower at all like them. There is a refinement, a richness of colouring, and quaintness of appearance about them, that must, I think, strike every one who has not previously seen them. For myself, I know there is no richer treat in the whole floral year than a good look at collection of Auriculas, whether in my own garden or elsewhere.

I was hoping that the Auricula was about to take its place as an exhibition flower; but I turn to the schedules of the two great Societies, and alas! all my hopes are disappointed. The Royal Horticultural Society offers prizes for them on May 9th, if I read the schedule aright, while the Royal Botanic Society's Spring Show is fixed for March 21st. It would have been impossible to have fixed two dates which would more thoroughly exclude the flower than these. Of course there may be reasons, and sufficient ones, for these arrangements, but they are not the less to be deplored; while in the case of the Royal Horticultural Society it seems to be a piece of bad arrangement, for there is a Show to be held on April 18th, which is about the time they are in bloom. When the National Exhibition was held on April 30th, it was then found that for the southern growers it was all too late, and yet now they are expected to come forward on May 9th! What the result will be it will not be difficult to tell. In an immense collection like that of Mr. Turner, of Slough, there will, of course, always be found some in bloom at almost any time from the middle of March to the middle of May; but he, I venture to say, will be the only exhibitor. Amateurs will, I fear, be excluded altogether, and thus the encouragement given is now withdrawn.

It is these capricious alterations which do so much harm to floriculture. "Letting well alone" seems to be unknown in the arrangements of the schedules, and I have yet to learn that this constant state of change is conducive to good. If a thing works well why meddle with it? if badly, let it be altered.

Another thing I must as a clergyman protest against—the holding of the shows on Saturdays. It leads, and must lead, to a large amount of Sabbath-breaking for masters and men, and effectually excludes us who live at a distance from town from being present.—D., Deal.

HEDGES, AND SHRUBS SUITABLE FOR THEM.

(Continued from page 218.)

MAELURA AURANTIACA (Osage Orange).—The expectations formed ten or twelve years ago of this plant have certainly not been realised, and its hardness is not so well established as could be wished; for, although few plants of it may be killed by our most severe winters, still fewer escape altogether, as the tips of the shoots, being in a more or less unripened condition when winter sets in, are destroyed down to the firmer wood. The plant is also more straggling in its growth than the White-thorn, so extensively planted in this country, but its thorns are quite as formidable; its shoots likewise are very robust, and in summer the leaf is rather pretty. About ten years ago I saw a hedge of it planted by a gentleman well versed in new shrubs and trees; the hot, fine summers of 1858 and 1859 favoured the growth and ripening of the wood, great expectations were formed of it, and nurserymen advertised it as a plant for ordinary fences; but the trying season of 1860, so fatal to the expectations of those who were experimenting with semi-tropical plants, gave the death blow to their hopes of this, and it has not been much heard of since. As an ornamental plant it has little to recommend it, and when planted in shrubberies its only qualities seem to be the unpleasant remembrances it gives to those who unthinkingly approach too closely its formidable spines, while it sends its loose, straggling branches to a greater distance from its stem than is always noticed by those who have duties to perform amongst shrubs. By way of experiment the *Maclura* may be tried as a hedge plant, but it must not be classed as an ornamental one, and for utility it is unquestionably inferior to the Whitethorn.

ARBOR VITÆ.—This offers a marked contrast to the last, being an evergreen of compact and quick growth, which bears cutting. It also has the advantage of being perfectly hardy, bearing transplanting well even when it is of large size, and suffering little from breakages by the weight of snow, so destructive to other shrubs. The Chinese species (*Thuja orientalis*), is more compact in its growth than the American (*T. occidentalis*), and the kind known as *Thuja Warreana* is also of very close growth. As the Arbor Vitæ is often planted where a quick growth is required, large plants may be procured, and a hedge made at once. Dry ground, not too shallow, suits it best, but it is not particular, and good specimens may often be met with in a soil and situation just the reverse of those indicated. To look well this plant ought to be trimmed with the knife, and not with the shears, and excepting in certain special cases the top looks better not evenly cut, but as if in a growing state, with portions a little higher than others. August is a very good time to trim it.

BERBERIS DARWINII.—Although I have not seen this plant much used as a hedge, yet from my experience and observations of its growth, it seems well adapted for the purpose, and if it can be fairly established as a hedge plant, I know of nothing more desirable. A close, compact growth, with now and then a shoot or two running out 2 or 3 feet beyond the rest as if they were the pioneers of others, is its general character, and no plant presents a greater amount of foliage, every shoot being thickly studded with leaves, and these, too, of a pleasing bright green. Added to this, the handsome flowers which it presents us with early in spring claim for it a place in the front rank of flowering shrubs, almost equal to that of the *Rhododendron*, and in fine autumns it not unfrequently furnishes a supply of bloom as well. As a hedge plant it possesses the required sturdiness, and I believe will bear cutting as well as any other evergreen. It also produces berries in great abundance, the colour being much the same as in those of *B. aquifolium*, or as it is generally called, *Mahonia aquifolium*. The resemblance in fruit, though not by any means a close one, is the only resemblance the plants possess, the character of the

flower, size of foliage, and other features, giving *B. Darwinii* a stamp of its own unlike others of this remarkable family, with the exception of *B. Wallichii*. I therefore anticipate we shall often hear of its being used as a hedge plant, and so far as I have tried it, it promises to become a handsome and useful one. A dry soil abounding in stones seems to suit it best, but it is by no means fastidious, and with me grows twice as fast as *Mahonia aquifolium* in the same soils and situations.

IVY.—This is certainly not a hedge plant, I expect some one will say, and rightly, too, in one sense; but it forms an excellent screen, and when a sort of framework is put up of any reasonable height, and Ivy planted against it, there is nothing which so quickly effects the double purpose of a partial fence and screen; and as it is known that Ivy is not very particular as to situation, we have the further advantage of possessing in one of our finest-foliaged plants the means of speedily erecting a shelter, or shutting out anything ugly, whether in the distance or close at hand. The species and varieties of Ivy are numerous, and many are of great beauty, but the common Irish Ivy is, perhaps, unsurpassed for quick growth, general hardness, and the deep glossy line of its foliage. As plants of it are plentiful enough, I would advise any one who may be about clothing his premises with evergreens, to turn his attention to Ivy. It will accomplish its work sooner, and continue longer in the same condition than anything else I know. Apart from its beauty as a climber, some of its varieties are so dwarf that their yearly growth does not exceed that of the *Laurustinus*, or similar shrubs. Where, however, a series of arches or other framework is to be covered with Ivy, the low-growing variety is the best to plant, and few plants bear trimming so well, or continue so long in beauty—in fact, the death of Ivy, excepting from accident, is unusual. Although it does not possess the sturdiness necessary to support itself, I nevertheless regard its claim as a hedge plant too good to be overlooked.

WILLOW.—This certainly ought not to take its place amongst hedge plants destined for ornamental positions, yet I have seen it occupying a prominent place in a flower garden of no mean pretensions. The situation being an exposed one, and it being desirable to have some shelter at the earliest possible period, Willow poles about 2 inches in diameter at the top, and long enough to be 8 feet above the surface of the ground, were planted, about 18 inches apart, in a ditch or trench prepared for them. They speedily struck root, and formed branches from bottom to top, supplying a high hedge or screen in a very few weeks after being fixed in the ground. This afforded sufficient protection for the summer, which was all they were planted for. Willows, however, are sometimes planted for the more definite purpose of a fence, but they are only to be recommended in a wet, swampy place, where they thrive best, and where nothing else will do so well. Perhaps the best kind is that called the Plum-tree Willow, from its leaves resembling those of the Plum tree, as it furnishes itself best at bottom. Most of the tree Willows with lanceolate leaves become very naked at bottom, and must often be headed-down. By the sides of ditches or ponds, or in very wet places, the Willow may be planted as a fence, and by frequent cutting-down and plashing, it may be made serviceable, but it cannot be said to be ornamental.

ELDER.—This is worse than the Willow, so far as appearance is concerned, and it has not the advantage of growing where other and more ornamental plants will not thrive, but it grows faster than anything else, and it has the merit of not being attacked by rabbits in places where these abound. The Elder will also sustain itself when competing with other trees and shrubs, and, in fact, is more likely to outgrow and overtop everything else than succumb to opposition. As a plant for a hedge, however, its merits are of a low order, and it is only mentioned here as some writers have a partiality for it. An old plant in flower looks very well, but no amount of trimming can make a graceful hedge or fence of this offensively-smelling tree.

FURZE OR GORSE.—Although of indigenous growth this plant now and then suffers from severe winters, and when planted as a hedge it does not bear clipping and trimming so well as many others. It is seldom advisable to plant it as a fence, unless for some special purpose, when its appearance is desirable, as it requires to be allowed more width than other plants, and looks better as an irregular mass than in a trimmed condition; indeed, the latter cannot well be maintained long. For a very exposed stony soil it may be necessary to try this plant, but where others will succeed, let this be banished to its proper quarters—viz., wastes and coverts. The double-flowering Furze, and the upright Irish variety, are,

nevertheless, ornamental; and deserving a place in most shrubberies.

HAZEL AND MAPLE.—Often found in old hedges that appear to have been formed out of the natural growth of the place, but neither desirable to have as a hedge plant. They have the merit of thriving in most soils; and the Hazel, especially, presents a close, compact bush, not easily penetrated by cattle. It is certain, however, that the advanced cultivation of the country is fast driving these plants from their established abodes, and but few, indeed, are planted. As we possess much better hedge plants than either, their removal will be no loss.

—J. ROBSON.

(To be continued.)

PROPAGATING AUCUBA JAPONICA.

A FEW remarks on the *Aucuba japonica* may, perhaps, be useful to some of your readers.

In September, 1864, I bought two small plants of *Aucuba japonica* vera, and planted them out at once. They both flowered in the spring of 1866, and with pollen gathered from them I impregnated a large plant of the common variety; the result was several dozens of berries, which were green and unripe on the plant during the severe frost in January, 1867, when the thermometer was below zero. Notwithstanding this, the berries ripened well, and changed to bright scarlet three or four weeks afterwards. I know that they were quite ripe, because I sowed the berries on the 28th of March in a pot containing sandy loam mixed with a small portion of peat, and every one of them germinated. I placed the pot in a shady part of the plant stove, but it was from three to six months before the young plants made their appearance. They are now fine little plants, and have just been potted-off singly into 60-sized pots. They nearly all partake of the character of the male plant, only one of them being spotted like the female.

In March and April, 1867, there were a great many blossoms on the two male plants. I therefore prepared a dozen small plants of the common *Aucuba* in various sized pots. These I placed in the orchard house, and as the flowers expanded I dusted them with pollen. My mode of proceeding is with a pair of Grape scissors to clip off the male blossoms, letting them fall on a small sheet of clean paper, and to convey them at once to the spot where the plants intended to be operated on are placed. One male blossom will dust from four to six of the others. Some of these small plants in pots are now very pretty objects, and have been a distinct feature in the greenhouse for the last two or three months. They look as well as ever at the present moment. One neat little plant in a 7-inch pot has 120 of these large bright scarlet berries on it, and several of the others have nearly as many. One large plant growing out of doors, which was also operated upon artificially, is covered with clusters of the berries.

I cover the male plants with glass as soon as the first flowers expand, as they are growing in a very exposed position, and are liable to be very much damaged by the wind and rain; but notwithstanding this precaution, and the fact that I cut the flowers off as fast as they expand, nearly every female plant in the garden has a few berries on it. The bees, I have no doubt, found their way under the glass covering, which is raised on bricks in order that the air may play freely round the plants. The greatest distance from the male plants at which I found berries was 180 yards, so that I have no doubt when plants of the male *Aucuba* become more numerous, berries will be common enough everywhere through the agency of the bees.—J. DOUGLAS.

MESSRS. CUTBUSH'S SHOW OF SPRING FLOWERS

AT THE ROYAL BOTANIC SOCIETY'S GARDENS.

This commenced on Saturday, will continue throughout the present week, and is altogether an excellent display, the extent of which will be judged from the fact that it fills a span-roofed tent adjoining the conservatory 150 feet in length and 16 feet in width. There is a 10-foot path up the centre, over which are suspended baskets of flowers, and on the side next the conservatory there is a stage with a row of Tulips in front, and a row of Hyacinths at back. Opposite this is a mixed bank of Camellias, Azaleas, Heaths, Epacris, Cinerarias, Cytisus, Crocuses, Narcissus, Lily of the Valley, Cyclamens, double *Prunus sinensis*, and other flowering plants, interspersed with a few *Draenas*, *Indiarubber* plants, and other subjects ornamental by their foliage; and at one end is a similar bank, whilst at the other

there is a plant of *Cyathia dealbata*, flanked by two quarter-circle wire flower stands.

Of the quality of the Hyacinths and Tulips which are the real objects of the display, the other plants being merely the adjuncts, the success which Messrs. Cutbush have achieved, both in the present and past years at the London and Liverpool shows, is a sufficient guarantee; in fact, many of the pots were in the collections shown at these exhibitions this year.

Of Hyacinths we remarked magnificent spikes of Baron Von Tuyl, Haydn, Marie, Mimosa, Charles Dickens, Von Schiller, Princess Clothilde, Macaulay, General Havelock, Grand Lilas, Gigantea, double Duke of Wellington, Van Speyk, and Mont Blanc. Of Tulips there are fine pots of Vermilion Brilliant, a most effective variety; Keizerskroon, Rex Raborum, Pottbakker of different colours, double Tournesol, and Couleur Cardinal, all of which are well known; Proserpine, rose; Brutus broken, red and yellow, very fine; Cottage Maid, white and pink; Chrysolora, yellow; Fabiola, white and rosy purple; Van der Neer, purplish violet; Thomas Moore, coppery orange; and Duchesse de Parma, deep crimson edged with yellow.

The conservatory itself also presents a gayer appearance than usual. Rhododendron arboreum and Camellias being covered with flowers, in addition to which there are Azaleas, fruiting *Aucubas*, *Cinerarias*, and various flowering plants. One large vase is very effective, being filled as follows:—Outer circle, Amy Hyacinth, red; second circle, Staten General, white; third circle, Lord Nelson, blue; then there is a double row of Grand Monarque Narcissus, with *Calla aethiopica* in the centre.

COCKSCOMB CULTURE.

I FIND great difficulty in getting seed of those which really produce fine combs. A neighbouring gardener grows them exceedingly well, and has a fine strain. I have just procured a little seed from him, and have sent a portion of it to the continent to be grown, hoping thus to obtain a good supply; and as I shall visit the country where it is grown during the summer, I shall see how it is doing then.

Mr. John Burnell, the gardener I have referred to, writes—“I have tried many plans to grow them well, and the best mode which I have found for growing dwarf and large Cockscombs is, to pot them from the seed pan into 60-sized pots, grow the plants in these until the combs are well formed, and then repot.”—WILLIAM DEAN, *Bradford Nursery, Shipley*.

NEW GLASS STRUCTURES FOR GROWING FRUIT.

SOME twenty years since, no difficulty was experienced in growing Peaches and Nectarines on outside walls, and I can recollect thirty years ago it was not at all unusual for a bushel of this fruit to be picked at a time in one of our gardens. Now these trees begin to decay after a few years, and, gradually dying away, require to be constantly renewed. They seem to have no constitutional strength. What is the cause of this? and is there no remedy, for it is a general complaint? Cannot we learn something from the management of these trees in the orchard house, where they invariably set their fruit, ripen it thoroughly, and do not die away? I have a house, 72 feet by 30 feet, in which the trees have borne excellent crops of fruit for the last eight years. These trees, forty-five in number, are planted in the soil, which is hard, and seldom receives any manure. They are watered occasionally, when a good drenching is given from a hose with a pressure of 50 feet. The pruning takes up about as much time as the training of a large tree on a wall. This, with the painting the trees in the autumn with Pooley's tobacco powder and methylated spirits, embraces the whole treatment. The crop keeps the trees from too luxuriant growth. Every tree is now in full bloom, and will bear a large crop. Twenty dozen of Peaches (Royal George) were gathered from one tree.

I have tried for several years to grow Plums and Apricots in the same manner, but having never succeeded, was obliged to give it up. I can grow large crops of this fruit in pots, but not in the soil. I have therefore had recourse to a plan I conceived some years since, which has more than answered my expectations. I also tried experiments last year with Peaches on the same system, and found that it answered equally well with them. I have now twenty-three Peach, Nectarine, Plum, and Apricot trees under experiment. They are now in bloom, though out of doors. They are surrounded with glass walls, open at the top, if we except a woollen net to keep off frost, and, in the autumn, insects.

Formerly, we used to consider Peaches and Nectarines as hardy. Now, I think we must consider them as only half-

hardy, and if so we must adopt a less rude treatment than in former years. A wall heated while the sun shines on it, and a wall rendered cold by wind and evaporation when the sun is off, does not seem to suit these now tender plants; neither does too great an amount of moisture to the roots, especially in autumn, agree with their delicate constitutions. Cold, moisture-absorbing winds cause a chill. Bringing the trees in too close contact with walls by nailing cripples them, and lowers their temperature to that of the wall, especially a stone wall. All these difficulties may now be overcome by very simple means, and probably we shall again be able to grow these fruits for ten years to come in the same perfection as formerly, by which time we may be obliged to introduce some other method if these plants become gradually more tender.—OBSERVER.

FLOWERS LOVELY, THOUGH COMMON.

I wish that those who grow only bedding-out plants because they desire "masses of colour," and so for the sake of a blaze of blossom during five months are content to have bare earth to look at during the other seven, could see my little flower bed for March this year. It has five rows of plants:—

1. In front, near the Box edge, are patches of Snowdrops, yellow Crocuses, dark and light purple Crocuses.

2. Behind these follow Dog's-tooth Violets, white and purple, of which it is hard to say whether the blossom or the leaf is the more beautiful, varied with groups of the tiny dwarf Daffodil, interspersed with that most valuable early white Hyacinth, now in full bloom, but of which I do not know the distinctive name.

3. Then follow Primroses, single and double, of various colours, making a very gay and effective row, with clumps of blue and white Squills at intervals.

4. Next, Hepaticas, white, pink, and blue, with bunches of *Orobis vernus*, a plant too little known, and Venus's Navelwort with its Forget-me-not-like bright blue flowers.

5. Lastly, in my back row come *Daphne mezereum*, Christmas Rose, still in bloom, and *Saxifraga crassifolia*, with *Jasminum nudiflorum* here and there on the stems of some fruit trees, and a few pink Ribes, now sheets of blossom to the great delight of my bees.

It would be hard, indeed, with any amount of bedding-out plants to produce anything more effective than this bed has been on all our bright days; its value, too, increased tenfold by its heralding to us the approach of summer, and gladdening us now at a time when flowers are generally scarce. When I add to all this the intense pleasure which it has been to me for weeks past, day after day, to see one after another of these, my favourites, peeping above the ground—sometimes, perhaps, helped by my own hand when I am tempted to look for my old friends in their accustomed places, and to remove the too heavy superincumbent lumps of our ungenial clay—I confess that I am at a loss to account for the apathy of so many to all but those plants which are grown by thousands under shelter through the winter, and bedded-out by the gardener in June.

Our old English perennials will, if carefully selected, afford the colour so much desired, and when not in blossom the plants themselves will always at every period of the year be a source of real pleasure and interest to any true lover of gardening and of flowers.

I have given in this letter an idea of what may be done in March. Possibly, if you think well to grant me space, I may send you an account of my April flower bed hereafter.—W. J. MELLISH, *Orston Vicarage, Notts.*

[We will grant the space, and we wish that many such communications reached us, "there's heart in his purpose."—EDS.]

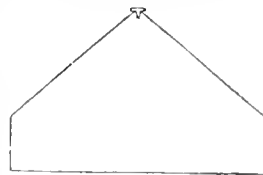
THE INNER TEMPLE GARDENS.—Mr. Broome has just now three Leicester vases and a score of small beds filled with about five hundred Hyacinths, which, though not yet in perfection, nevertheless promise to be most satisfactory for an out-door London garden. In addition to the Hyacinths there are Crocuses now in very good bloom, Tulips to succeed the Hyacinths, and Virginian Stocks and other early-flowering annuals to furnish a further succession, and which are now just above ground. These will give place to bedding plants which, in turn, will be succeeded by Chrysanthemums, carrying on the succession of bloom to Christmas. Mr. Broome plants his Hyacinths in October in cocoa-nut fibre refuse, under a west-aspect wall,

removes them in January, either by hand or with a hand-fork, taking care not to break the roots, and plants them in the decayed refuse.

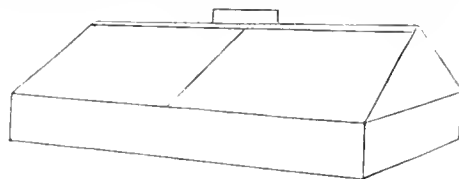
WOODEN-FRAMED HAND-LIGHTS.

Is it generally known carpenters can make very serviceable hand-lights for all general purposes about a garden? It is well known that hand-lights are in general made of cast iron; this renders them very heavy. One of the objections which some have to using cast-iron hand-lights is their very great liability to be affected by the weather; in hot days when the sun is powerful they become very hot, and in frosty weather the reverse takes place.

What I would recommend may be used for nearly all the purposes to which cast-iron hand-lights are applied. Any carpenter can make for a hand light a wooden frame 1 foot 9 inches long by 15 inches wide, or 2 feet long by 18 inches wide, and from 6 to 8 inches deep at the sides, having a spau-shaped roof rising to 16 or 18 inches high. Let a tolerably stout piece be employed to pass between the tops of the ends or gables; and if one piece of glass be objected to as being used on each side, let one or more ribs be used, nailing them under the upper ridge of wood. As I have already remarked, this ridge of wood ought to be tolerably strong, as it has to bear the handle which lifts the whole light when made. Fig. 1 represents the end of one of these very useful hand-lights; fig. 2 is a side view, having the handle by which the light is lifted.



For many purposes, especially during winter, these lights are very useful, as for placing over Cauliflowers in any convenient place, or many other things which are the better of



slight protection. The glass in these is not so liable to be cracked by frost as in the cast-iron hand-glasses. In order to give air to plants under them, I place a brickbat or knob of wood the size of the clenched fist close by them; and thus by only moving the light 1 inch backwards or forwards I have it either off or on the brickbat. They will be found not to be half the price of the cast-iron hand-lights; this in itself is a consideration with most people.—G. Dawson.

LOBELIA SPECIOSA AS A DECORATIVE PLANT.

It may surprise some and interest others to know in what manner this plant is so, but not for summer garden decoration; nevertheless, when it is grown well it is a most splendid plant for early spring conservatory decoration. My employer is very fond of it as a table ornamental plant, and most graceful it is for the purpose.

It is very easily grown, and requires but little attention. I have it in bloom about seven months in the year, and I find, more especially towards the summer, when blue is rather scarce in-doors, that it greatly enhances the in-door decoration.

I only bring this under notice that some who may not have tried it may venture on a pot or two, and I am sure they will not repent of the little time and labour devoted to it. Plants in a 32-sized pot, and covered with bloom all round and to a depth of 2 feet or more, will well reward any one.—NEMO.

CHECK TO THE SLUG AND TURNIP FLY.

A LITTLE gnatow sown broadcast over the surface kills or banishes slugs. It is equally effective against the Turnip fly if sown on the surface at the rate of 2½ cwt. per acre. It answers a double purpose, for it not only keeps away the fly, but serves as a top-dressing. Its effects were proved here last

year on a piece of Turnips. Part being treated in the way I have described was a good crop, but the part not so treated was completely eaten up by the Turnip fly.—C. J., *Acley*.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

THUNIA BENSONII (Mrs. Benson's Thunia). *Nat. ord.*, Orchidaceæ. *Limn.*, Gynandria Monandria.—Native of Rangoon. Flowers purplish lilac and white. Lip darker purplish lilac, with yellow-crested disk.—(*Bot. Mag.*, t. 5694.)

BEGONIA GLANDULIFERA (Glandular Begonia). *Nat. ord.*, Begoniaceæ. *Limn.*, Monoclia Polandria.—Native of Trinidad. Flowers white.—(*Ibid.*, t. 5695.)

DICENTRANTHERA MACROPHYLLA (Large-leaved Dicentrantthera). *Nat. ord.*, Acanthaceæ. *Limn.*, Didymia Angiospermia.—Native of Fernando Po, and banks of rivers in Western Africa. Flowers rosy purple externally, whiter internally.—(*Ibid.*, t. 5696.)

ODONTOGLOSSUM ALEXANDREI var. **GUTTATUM** (Spotted variety of Princess Alexandra's Odontoglossum). *Nat. ord.*, Orchidaceæ. *Limn.*, Gynandria Monandria.—Flowers white spotted with dull crimson; lip yellow at the base.—(*Ibid.*, t. 5697.)

VERNONIA (STENGELIA) CALVOANA (Signor Calvo's Vernonia). *Nat. ord.*, Composite. *Limn.*, Syngenesia inapalis.—“This magnificent composite plant” is a native of the Cameroons Mountains, in the Bight of Benin, at 7000 feet elevation. Ray florets and involucre scales white; disk florets purple.—(*Ibid.*, t. 5698.)

COLA ACUMINATA (Kola-nut Tree). *Nat. ord.*, Sterculiaceæ. *Limn.*, Monoclia Monadelphia.—Native of Tropical Africa. The nuts are universally eaten by the natives there, and in the West Indies, as a condiment. They are also used as a medicine, and to sweeten putrid water. Flowers yellow.—(*Ibid.*, t. 5699.)

PELAGONIUM. *Andrew Henderson*.—“Submitted last autumn to the Imperial Horticultural Society of France, and awarded a first-class certificate for its superlative merit, this very beautiful double-flowered variety of Zonal Pelargonium, may well commend itself to our notice. M. Carrière in advertising to it, remarks that, had the raiser flowered it soon enough to have been able to exhibit it at the Great Paris Exhibition, it would have been universally admitted to be greatly superior to all other known varieties in its class.

“One of its chief features of excellence consists in its style of growth, the habit and texture of foliage being more like those of the majority of the fine single-flowered varieties of English gardens, than of the robust, coarse, vigorous double sorts of the *P. inquinans* section, previously known. The colour of the flowers also differs from that of all preceding varieties, being a clear deep scarlet lake. The truss is of extraordinary size, larger than in any previous double variety, taking a globular outline, and bearing from sixty to eighty expanded blossoms, which are well proportioned, very double, and regularly imbricated like a *Ranunculus*, thus again differing from the sorts already known, which more nearly resemble the *Hollyhock* in the arrangement of their petals.

“This brief description sufficiently indicates the distinguishing features as well as the great merit of this novel variety, which we may safely recommend for conservatory pot-culture, and also to form select specimens for garden decoration. The variety was raised by M. Lemoine, of Nancy, and a great portion of the stock has been acquired by Messrs. E. G. Henderson & Son.”—(*Florist and Pomologist*, 3 s., 1, 19.)

EMIGRATION.

The communication in the *Journal* of the 20th ult., from a correspondent in New Jersey, calls for comment. He endeavours to argue that “*WILTSHIRE RECTOR*” is wrong in teaching contentment, and attempting to dissuade his countrymen, and those of them who are gardeners or garden labourers in particular, from leaving a certainty in their own favoured land for an uncertainty in a new and strange country, and goes on to show the advantages to be obtained by a residence in the United States. He states that his labourers each receive 1 dol. 60c. per day for their work, which if they were every day employed would amount to 9 dols. and 60c. per week, and if they paid 5 dols. a-week for board and lodging, there would be left a balance of 4 dols. and 60c. with which to provide clothing

and other necessities. Now, how far will this go even with an unmarried man, when a respectable suit of clothes, such as an English gardener would like to appear in, will cost from 10 to 50 dols., and a good pair of boots 8 or 10 dols.? Then, again, the cost of provisions is enormously high, and, if necessary, I could give a list of prices which will prove that fact, and show that the cost of living is proportionably greater than in England.

The fact of the shipment of broadstuffs, &c., from New York to England is no argument at all. There is a surplus of Wheat, flour, cheese, &c., in the country that could not be disposed of at any price at home, and must be exported for a market. Most of these productions come from the Western States and Canada, and when the cost of production and the price received are taken into account, it will be found that there is very little for the producer, and that the railway and other carriers obtain most of the profits.

I have warned “gardeners by profession,” of the vicissitudes of the climate in the temperate parts of North America, and your correspondent's story tends to prove me right. Although “John,” judging from his vernacular, must have been a very poor specimen of the professional, yet we cannot believe that his “flowers” came to grief altogether through his inexperience and negligence. They were a total failure, and as the master seems to have supplied the plants it must be presumed the “sort” was all right, and the season must have had some effect on both the “flowers” and the Cabbages. If this be not the case, then gardening in America must require a vast deal of American experience.

At the present time the United States is a tax-ridden country. Even a halfpenny bunch of matches is pasted over with an internal revenue stamp of the same value as the matches. Then it must be remembered that little or no work can be done in the winter, and a labouring man must lay up enough of his summer earnings to provide for him during the unemployed days of winter. I know a hardworking industrious old man, and a good kitchen gardener, who has been in business for himself in America for some years, and who has often told me that while working in a nursery near Exeter for 9s. per week he was better off and much happier than he has ever been in his adopted country, as the winter always eats up all he can lay by during the growing season.

After a residence of eighteen years in foreign lands, and much of the time spent in various parts of North America, I say most emphatically, *Stay at home*, and as a pendant to this advice would add the following extract from the *London Scotsman*, and say that not only ironmoulders to whom it particularly refers, but all others, and especially the members of the “*Journal*” circle, will be more happy and prosperous if they take good “*WILTSHIRE RECTOR*’s” advice.—W. T. GOLDSMITH.

“CAUTION TO PURPOSED EMIGRANTS.—The sanguine promises of plenty of work and high wages in America, held out to members of the Scottish Ironmoulders’ Society a few months ago, have not been realised. Three members of the union, who went to the United States last November in the hope of finding plenty of work, have sent home a melancholy warning to their comrades, in which they state that they have been ten weeks in Pennsylvania and ‘have not yet found a lion’s work.’ They complain in very severe terms of the officers of both Scotch and English societies ‘for withholding information relating to trade in America.’ The member at home, they say, ‘have been continually kept in the dark. All kinds of work are equally scarce; we are nothing but starvation before us, and hundreds of our fellow-moulders who have come here as we did, are in a like, or even worse condition.’ The President of an Ironmoulders’ Union in Philadelphia corroborates the statement of the unfortunate Scottish emigrants. ‘Fully three-fourths of the entire labouring population of the States are now out of work,’ he says, ‘and there seems to be no prospect of improvement. He denounces the emigration scheme promoted by the officers of the English and Scotch trades’ unions as a ‘direct outrageous fraud’ practised upon their own members, and a gross imposition upon the American people. If the leaders of trade societies can make no reply to this, they ought to be severely punished in some way or other.”

ORNAMENTAL AND FLOWERING SHRUBS.

(Continued from page 204.)

DRYAS REZARUM.—Flowers pink, small, numerous, sweet-scented, appearing before the leaves. January to March. 3 to 4 feet. Seeds. A well-known and highly ornamental shrub. There is a variety with white flowers.

DRYAS CRENATA HOGG-ELLING. — Flowers white, double, highly ornamental, in May and June. Cuttings and layers. 2 to 3 feet.

DRYAS GRACILIS.—Flowers white, in clusters, very handsome, and

very profuse-blooming. 2 feet. Cuttings and layers. One of the very best shrubs for forcing.

DEUTZIA SCABRA.—Flowers whitish, in clusters, in May and June. Succeeds in shade, and is of quick growth. 6 feet. Cuttings and layers.

DIERVILLA CANADENSIS.—Flowers yellow, small, June to September; leaves shining. 3 feet. Suckers, layers, cuttings, and seeds.

EGONYPUS LATIFOLIUS.—Flowers green, succeeded by red fruit ripening at the end of summer, and which are its chief attraction. 10 feet. Seeds, cuttings, and layers.

FORSYTHIA VIRIDISSIMA.—Flowers yellow, appearing before the leaves, which are dark green. It flowers from February to May. 6 to 8 feet. Cuttings and layers.

HALESA TETRAPTYCH (Snowdrop tree).—Flowers white, drooping, small but numerous. 8 to 10 feet. Suckers, layers, and cuttings of the roots.

HAMAMELIS VIRGINICA.—Flowers yellow, profusely produced in autumn and winter. 10 feet. Layers.

HALIMODENDRON ARGENTEUM.—Flowers purplish, from May to July; leaves white and silky, the shoots being spiny and grey. Grafted on the Laburnum, it forms a neat head. 6 feet.

HEPHERAE RHAMNIFOLIA.—Flowers apetalous, succeeded by numerous orange berries. It succeeds admirably planted near the sea. 8 to 12 feet. Layers, suckers, and cuttings.

HIBISCUS SYRIACUS (*Althæa frutex*).—Flowers large, single or double, and in different varieties, white, red, purple, or striped. They appear in August and September, and are very showy. 6 feet. Layers, and seeds of the single varieties sown in heat, the seedlings being well hardened-off.

HYDRANGEA HORTENSIS.—Flowers in large dense heads, pink changing to blue, and sometimes blue. June to August. 3 to 5 feet. Should have a sheltered situation, and light rich soil well supplied with water during the growing season. Cuttings and layers.

HYDRANGEA QUERCIFOLIA.—Flowers white, in dense clusters in summer. 5 feet. Cuttings and layers.

KERRIA JAPONICA.—Flowers yellow, very profusely produced in spring and early summer. The double variety is that most generally cultivated, and is very ornamental. 6 feet. Suckers and cuttings.

JASMINUM FRUTICANS.—Flowers yellow, small but numerous, June to September. It requires a warm sheltered situation and a dry soil, otherwise it does not succeed. 6 feet. Suckers and layers.

LEUCOSTEREA FLORENS.—Flowers purplish, in June, succeeded by purple berries. It requires a warm situation. 6 feet. Cuttings in slight heat or under a hand-glass, also seeds in heat.

LONGICHA TATARICA.—Flowers reddish, in April and May. It thrives well under trees. Cuttings and seeds.

LONGICHA ILERICA.—Flowers orange, in May. 6 feet.

LONGICHA PYCNANTHA.—Flowers white, in May. 6 feet to 8 feet.

LONGICHA XANTHOPHYLLA.—Flowers yellow, in May and June. 6 feet to 8 feet.

All the shrubby Honeysuckles thrive under trees, but not in deep shade.

LIGUSTRUM VULGARE.—(Common Privet).—Flowers white. Very valuable for planting under trees, for hedges, and as a screen. 6 to 10 feet. Cuttings and seeds.

MYRTICA GALE (Sweet Gale).—Red catkins in May; leaves oblong and sprinkled with yellow dots. Where the *Rhododendron* grows this will thrive, otherwise it requires a peat soil. Layers, cuttings, and suckers. 4 feet.

PAVIA DISCOLOR.—Flowers large, yellow and purple, in June. 6 to 8 feet. Grafting on the Horse Chestnut.

PAVIA MACROSTACHYA.—Flowers white, sweet-scented, in July and August. Thrives in a shady situation, and does well in moist ground, hence it is very suitable for planting near ponds and sheets of water. 8 to 10 feet. Layers.—G. ARBELY.

(To be continued.)

PHALENOPSIS SCHILLERIANA.

THROUGH the courtesy of Mr. Robert Warner, of Broomfield, near Chelmsford, we have been permitted to see the finest collection of *Phal. nopsis Schilleriana* in bloom that exists anywhere out of their native region. Rare as the plant is, Mr. Warner can show no less than forty-two fine specimens, some of which are hitherto unrivalled in this country. It is gratifying to have to state that Mr. Warner is sufficiently generous not to reserve the pleasure entirely to himself, but is willing to share the privilege of admiring to all who are interested in their culture.

WORK FOR THE WEEK.

KITCHEN GARDEN.

It is advisable to run the hoe over every part of the kitchen garden and slips whenever the ground is in good condition for the work. *Asparagus*, the beds should now have their spring dressing, if not yet finished; fork them over slightly, and rake

the soil even. Cut and trim the edges of the beds. *Artichokes*, if not yet done, lose no time in giving them their spring dressing; thin out the suckers, dig in a good quantity of dung among them, and plant a few rows of the spare suckers to succeed the general crop. *Broccoli*, a few seeds of Grange's Early should now be sown. *Cabbage*, continue to sow a few early sorts every fortnight. *Peas and Beans*, go on with successions of these every other week. *Potatoes*, in many parts of the country people put off planting their Potatoes until too late; the whole crop should be in before the middle of the month, and the sooner the better. *Endive*, where the last autumn-sown plants have stood the winter they will now require to be tied up in succession, like Lettuces, to blanch; they will come in very useful with the early Lettuces, a few of which should also be tied up if they are opening too much in the heart. *Chives*, no garden should be without this useful little plant; a row of it planted along an alley, will be a substitute for young Onions all the year round. *Onions* sown last August should have the soil well stirred between the rows; let one bed of these Onions remain to be drawn before the spring-sown Onions come in, and transplant the rest. *Spinach*, the August-sown should have the soil well stirred between the rows.

FRUIT GARDEN.

Run the hoe between the Strawberry rows, or if the ground was dug early in winter, you had better stir it with a fork. Hoe also between the Raspberries, Currants, and Gooseberries, if only to loosen the surface of the ground. Watch carefully the state of the weather while the Peaches and Apricots are in blossom.

FLOWER GARDEN.

The weather has been so mild, that we appear almost on the verge of summer before the spring has fairly commenced. All new ground work, such as planting, turfing, &c., must be finished as expeditiously as possible, and as soon as all rubbish has been cleared from the borders, grass, &c., prepare for turning the walks, and making all clean for the season. This, though an operation readily performed, is frequently hurried over, and badly executed. A walk after it has been turned, leached, and a facing of new gravel laid upon it, should remain in that state three or four days for the gravel to bleach, and not be rolled until it has had a shower of rain upon it. The utility of this plan is, the gravel becomes washed before it is rolled down, and a clean bright walk at all times is obtained, instead of one sticking to the feet, and falling into holes in wet weather. This delay causes a little inconvenience for a time, but it is fully counterbalanced by the excellence of the walks throughout the season. Birds are very troublesome to newly-germinating seeds, and where it is inconvenient to cover with netting, it will be well to sprinkle the beds with sand made wet with spirits of tar. The transplanting of all autumn-sown annuals should be completed without delay, also of biennials. Prepare for a sowing of the latter a piece of ground which must be slightly enriched and dug to a good depth. Amongst shrubs the work for the season will be finished, except attending to those newly planted, and watering them when necessary. Take care that all newly-planted trees are properly staked before they begin to make new roots, and mulch them with short grass occasionally when the lawn is mown. The flowers of Auriculas are putting on an improved appearance, still keep the plants warm at night by mat coverings, and as they are growing fast they should have a moderate supply of water. The potting of Carnations has commenced in many parts of the country, and when the plants have been brought up hardy, the sooner they are out the better. As a precaution, place a slice of potato between the layers, if two are planted in a pot, so that they may have a chance of escaping destruction, should a solitary wireworm be in the soil.

GREENHOUSE AND CONSERVATORY.

To keep the conservatory now in proper order you must go over the plants daily, or at least every other day, and take out such as are beginning to fail. Pick off all dying flowers and leaves, and also distorted flower buds, or, indeed, any small or ill-arranged flower which does not look well. Change the plants in sitting-rooms often. If they are worth preserving afterwards, see that the more common sorts of plants brought in merely for their flowers or fragrance do not crowd on the good specimen plants. Azaleas, and many other plants, are now making their young growth, and if choked up with a profusion of forced plants of little value save for their flowers, it will soon injure them. It may be necessary soon to use blinds to guard the flowers from strong sunshine, but this should be deferred as

long as possible. Fuchsias represent that class of greenhouse plants which do best to be shaken out of their pots annually, but as the strong varieties of them are gross feeders, you may use a rougher compost for them than is recommended below for stove plants under the same treatment. A few of the smaller plants of the common Cacti may be now forced to make an early growth, this will enable them to flower early next spring. Potting and propagation, with a more liberal supply of water and less air, must be attended to.

STOVE.

In potting stove and other plants a distinction should be made between the preparation of the composts for permanent woody plants, and for those softwooded kinds which are annually shaken out of pots. *Justicias*, *Vineas*, and some of the *Clerodendrons*, form part of the latter class. After these are done flowering in autumn, they should be close-pruned, and left partially dry during winter. In spring the soil should be shaken from their roots when they are put into small pots, to be shifted into larger ones as they advance. The compost for this potting should be made quite fine, in order to let the roots occupy every particle of it in a few months, while the compost for permanent woody plants can hardly be too rough.

PITS AND FRAMES.

The bloom of the *Hydrangeas* introduced into the forcing house in January will now be advancing; if you have any doubt of its being blue, water the plants regularly with water impregnated with alum to the extent of 1 oz. to every quart, and keep the plants standing in feeders or saucers to prevent the loss of water. Brompton Stocks in pots, may be planted out, surrounding the ball with rich soil, and spring-flowering Ten-week varieties may be left unprotected, so as to prepare them for bedding-out about the middle or end of April.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Onions.—Sowed the last of the main crop in rows, covering the seeds with light soil riddled, from beneath the potting-bench; trod slightly in, and levelled by raking in the same direction as the rows. The ground is still rather heavy and damp for rolling, but as soon as it is dry enough we will run a light roller over it. We find it a good plan to do this just as the seedlings begin to appear. This secures a firm surface, and then a slight hoeing between the rows does not interfere with the general firmness, whilst it keeps the ground cool and prevents its cracking with fierce sun heat.

Carrots.—Sowed some out of doors, but the chief work as respects them has been preparing the ground by frequently turning it. The same remark applies to Beet, Salsafy, and Scorzonera.

Peas.—Sowed successions, planted out what had been reared under protection, placing laurel twigs on each side to keep them warm, and staking as the work proceeded. We have been obliged to net those coming through the ground out of doors, to preserve them from various intruders. The covering of root kept away mice, &c., until the seedlings began to appear. The dwarf Peas in pots in the orchard house must have a few little twigs stuck round them the first wet day.

Sowed Spinach, Radishes, Lettuces, and Turnips, the last in the open air and also under protection. When Turnips are wanted early they should be sown under glass and over a slight hotbed in the beginning of the month. One reason why they require protection when sown early is, that the frost will not greatly injure the appearance of the plants, but it will cause them to bolt, and then farewell to a crisp, succulent Turnip.

Potatoes.—From want of material at the time we could not give any bottom heat to our earth pit, which we planted some time ago, and owing to a deficiency of sun heat to warm the soil, the crop will not be so early as we expected. We have, therefore, planted two or three frames having a mild heat below them with good plants from pots, and also some taken up with balls from a Mushroom house, which will come in soon and succeed those grown in pots. Before this shall have been printed we shall also plant at the foot of the walls, and in well-pulverised borders those thus set growing in the Mushroom house, as much experience and observation testify that plants thus started and rooted will come in weeks earlier than those planted without that preparation. The sets are placed on old Mushroom dung and leaf mould, and covered about an inch, and the planting should take place when the tops are not more than an inch above the covering. If the sets be placed 3 or 4

or more inches apart they may be lifted with a mass of roots imbedded in the rough material, and if the day is sunny and the warm surface soil is placed round the roots, they will receive no greater check than will predispose them to tuber more quickly. We see the first-planted by the side of a wall are coming through strongly and well.

Celery.—Made up a bed, which will have temporary protection, in which to plant out what was previously pricked out from the seed pot. In a week or so will sow on a slight hotbed Celery and Cauliflower, the latter being pricked out before the former attains any size. The bed which we will use for planting-out the nice little plants of Celery, consists of 15 inches of dung and leaves, then of 3 inches of rotten dung and rough mould, and was finished with 2 inches of fine light soil in which to plant about 4 inches apart. From this place the plants will be lifted with balls at planting time. This bed will be covered with sashes for a few weeks, taken from a frame filled with Lettuces in use, and as these are outside the garden, we protect with nets to keep off marauders. There is just now a fine lot of Lettuces in the coldest orchard house. Were we disposed to take up market-gardening, we could easily see to what uses these cheap houses could be devoted in securing early vegetables. We question if even then cold places in the north might not vie with the south and the Channel Islands, and the south of France, or even Algeria, for the carriage from thence must cost something, and, therefore, would tell as a percentage on the cost of glass. As it is, unless with early-forced crops, the foreign and southern growers must have it all their own way, as Potatoes, Rhubarb, &c., come into the northern markets before they are more than above ground in these neighbourhoods. In general the first importations of new Potatoes are poor in flavour; but still, being new Potatoes, they are a boon and a change to those who cannot have them of home growth.

Sea-kale.—Planted a piece after duly trenching, airing, and enriching the ground. As we grow chiefly to lift for forcing, and to cut from the open ground with the help of a pot or a box over the plants, we grow them chiefly in rows 2 feet apart, and the plants 1 foot apart in the row. Seedlings of last year planted now make strong crowns for next season, and if these are cut that year, and three or four shoots left, they will be strong heads for lifting for forcing the season following. We like young plants best, but cuttings from the bottoms of the roots, if 6 inches long and as thick as the little finger, make excellent plants, but come in later. The top end should be just above the level of the soil, and when the concealed buds there break, it will be necessary to thin them if more than two or three come. Last season we did not obtain any seed. We never like to have too much as it injures the plants for making fine buds for the following year, but we generally leave a piece which we do not intend to use until it has had another summer's growth, but last season as soon as a seed pod began to become a little firm it was pounced on and devoured by the rats. We noticed a fact new to us the other morning, which explained to us what we had found next to inexplicable—how rats could flourish in large settlements at a great distance from water. In the neighbourhood of some wheat stacks we could count a score or more rats quietly sipping the dew that rested on young Clover and other plants, so that they were thus saved the trouble of taking a long journey in search of a drink.

Sea-kale at this season may be had very fine if covered with earth or ashes to the depth of 7 or 8 inches, and cut as soon as the first leaf peeps through. It may also be had fine in beds, covered with moveable wooden boxes the width of the beds, and with lids on one side if the boxes are too heavy to be easily moved. The worst of rough boxes is, that the sun will open the joints; this could be prevented by tacking slips of wood 1½ inch wide across each joint. A few open joints will interfere with the blanching of the Sea-kale. A very simple and good plan is to have raised beds 3½ feet wide, with two rows of strong plants in each bed, and 2-feet-wide sunk alleys or trenches between them, and to fill these alleys with sifted ashes. Mulch the plants in the beds in summer, to make them strong; remove all this surface-dressing, except the most decayed, in winter, and cover from 6 to 8 inches deep with the ashes. If the alleys are then filled with fresh dung, it will come in for top-dressing next summer, when the ashes are turned back again to serve for the blanching process in future years. For early supply, from the beginning of November, and onwards, the lifting and forcing in heat and darkness give least trouble.

Globe Artichokes.—These have stood the winter well, and we allude to them here chiefly for recommending a practice that

will be useful to those who like to have the use of this vegetable as long as possible—namely, to plant a row or a fresh piece every year, by taking not mere slips, but good pieces from large stools, by undermining with a pick and spade. These pieces will produce the same season, but the check of moving will cause them to produce a month or six weeks later than the general crop.

Asparagus.—Turned over the ground intended for a fresh piece, and in the absence of beds in which to grow and force, and, therefore, on the system of taking up a piece every year, we find it more convenient to grow it in rows, making these rows when planted in a rounded ridge-form, and depending a good deal on summer-mulching. We would scatter salt on our producing plantation now, as it would not only assist the young shoots, but would also assist in keeping the ground free from weeds. Any cleaning required should be given without delay, as the hoe is dangerous after the shoots begin to push up.

FRUIT GARDEN.

Much as in previous weeks, only we watered the pots and part of the ground in the orchard house with drainings from the farmyard. This liquid was not strong enough to need any dilution with water, and it was warm enough not to need the addition of hotter water. When water percolates through an open exposed dungyard, it is not often that much clear water will require to be added; but it is always safe to err on the side of weakness, and not to give such water too strong. We have seen liquid manure in a tank that had no ordinary rain or other water at all, and in that case we should have considered from eight to ten parts of clear water to one of the manure liquid essential to make it safe. Judgment must, therefore, be used, and treatment varied according to circumstances. Our latest house is coming into bloom in spite of us, and even Plums are now opening their blooms. We never saw the bloom stronger. Out of doors we are proceeding with pruning, nailing, &c., as fast as we can. Will surface-clean Strawberry quarters as soon as possible. Plants pricked out in beds last autumn may now be transplanted into well-aired ground, and will bear a good crop, as in most cases the fruiting plants can now be discerned—one advantage of this thick planting in autumn and final planting in spring, besides a great saving of ground at first. In stiff, good, loamy soils, little more will be required than planting with balls, and then slightly mulching the ground, but in all light soils the soil cannot be made too firm by treading and ramming after planting, and before the mulching is applied.

ORNAMENTAL DEPARTMENT.

Gave a good rolling, especially to the grass by the edges of walks. Had these cut straight with the line and edging iron; cleaned part of the walks, and will have to hoe others, where there is rather much green to permit of weeding and sweeping. Made banks ready in turf and earth pits, and turned the beds over roughly to become sweetened for bedding and other plants. Turf makes the best walls for such pits, but earth does very well firmly trodden, and covered with turf at back and front. These in some cases have stood many years; the turf on the top keeps frost and wet out of the walls. With glass these are as good for the purpose as brick pits or pits with wooden walls, and also answer admirably when coverings of mats or calico, or wooden shutters are used. Much has been done in finding room for young plants, regulating verandahs and conservatories, removing decaying plants, and supplying with fresh in bloom; sowing seeds, pricking-off seedlings, and making cuttings of all scarce plants or those which will be wanted in quantities. The general stock of Asters, Stocks, &c., we will deter sowing for a week or two, as we prefer they should not be stunted after they appear; and when the seedlings appear, and are then starved from the want of means to give them room and justice, they rarely succeed well afterwards. It is much better to sow later, and so that the plants may receive no check. Moved Dahlias to the floor of a house, where they could be advanced a little. Scarce good sorts should have been in heat earlier. Hardy annuals should be sown in light soils. In cold soils it is well to cover each patch with a pot until the young plants are fairly up. When regular beds are wanted this pot system is a good one; but when much regularity and perfection in outline are desired, we prefer sowing on a bed, with rotten dung and rough mould below the fine soil on the surface, and then hitting in lumps and transplanting. This requires more labour, but the result generally more than repays the extra trouble.

Goose or Furze.—This is now much valued for cover in many places. On a large scale it is best to sow it in the present or

in the first part of the next month, on ground made as fine as for a crop of Turnips, and then the seed will do best if sown in drills, and slightly covered and rolled. It likes a good loam best, though it will grow in most soils. In smaller pieces it may often be desirable to plant, and for this purpose, when grass, &c., was valuable for cover for birds, we have planted successfully by making holes 3 to 4 feet apart and putting two plants in a hole. We have also planted by making slits with a narrow spade so as to let the roots straight down. In all cases of planting, however, the stronger and the older the plants the worse suited are they for the purpose, and the less chance is there of their growing freely. The best plants are one-year seedlings, if they range from 1 to 3 or more inches in height. These in general will do well.

Frequently a small cover is wanted, and it is not desirable that the ground should be seen turned up, either by spade or plough, but that it should present its natural wild appearance, especially from a distance. In such a case, holes may be dug, or slits made for young plants; and for sowing, narrow strips 16 to 18 inches wide may be dug, with intervals 3 or more feet in breadth. In the centre of the dug part we draw a drill, and deeper than is wanted if we can readily obtain some light sandy soil riddled for covering the seed, and not so deep as to fill the drill. This plan has several advantages—first, there is no danger of stiff soil so incrusting the seeds as to keep them from the atmosphere and thus prevent their freely germinating; secondly, in light soils the seeds being deeper-placed, though not deeper-covered, the seedlings when young are less likely to be forced out of the ground, especially by frost, and if deemed necessary a little earth may easily be placed along the sides of the young seedlings; thirdly, the grass and weeds that will grow in the intervening spaces will in a withered state be a great protection to the Goats for the first year or two when it is often injured by frost and cutting winds. We have found the latter plan answer better than sowing in large breadth, covering the ground ultimately much better and more regularly, and the grass in the intervals was useful for nesting until the Goats covered the ground.

In all such cases of coarse plantations it should be clearly understood, that all the labour and the expense will be money thrown away wherever hares and rabbits abound, unless the young plants are protected from their ravages by wire netting or other means. Young plants are most eagerly cropped, and even rather old plants until well established are not safe. One would imagine that the prickles would be enough of protection, but there are some animals, like some men, that opposition and difficulty only whet into greater energy and determination.

Goats when cut young, and ground or bruised into a pulp, makes a rich pleasant food for cattle in winter. We have been assured that a horse will do as much work on a peck of bruised Furze as on a peck of the best Oats.—R. F.

TRADE CATALOGUES RECEIVED.

Downie, Laird, & Laing, Stanstead Park, Forest Hill, London, S.E., and 17, South Frederick Street, Edinburgh.—*Descriptive Catalogue of Florist's Flowers, &c.*

J. Salter, Versailles Nursery, William Street, Hammersmith, W.—*Descriptive Catalogue of Chrysanthemums, Dahlias, Pyrethrum, Hardy Vaccinated Plants, &c.*

J. Foulds, Hallard Hall Nursery, Stretford New Road, Manchester.—*Catalogue of Plants and Cuttings of New Zonal Bedding Pelargoniums, Fuchsias, Chrysanthemums, &c.*

Hogg & Wood, Coldstream, N.B.—Hogg & Robertson, 22, Mary Street, Dublin.—*Catalogue of Select Agricultural Seeds, &c.*

COVENT GARDEN MARKET.—MARCH 25.

THE market continues to be abundantly supplied. Good Pears are now very scarce.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples 1 sieve	3	0	5	0	Melons..... each	0	0	0	0
Apricots doz.	0	0	0	0	Nectarines..... doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges..... 100	3	0	7	0
Chestnuts..... bush.	10	0	16	0	Peaches..... doz.	0	0	0	0
Currants..... 1 sieve	0	0	0	0	Pears (dessert) .. doz.	4	0	8	0
Black doz.	0	0	0	0	Fine Apples..... lb.	5	0	12	0
Figs doz.	0	0	0	0	Plums 1 sieve	0	0	0	0
Filberts..... lb.	1	0	0	0	Quinces doz.	0	0	0	0
Cob. lb.	1	0	0	0	Raspberries..... lb.	0	0	0	0
Gooseberries .. quart	0	0	0	0	Strawberries..... per oz.	2	0	3	0
Grapes, Hothouse.. lb.	12	0	20	0	Vanillas..... bush.	10	0	14	0
Lemons..... 100	8	0	12	0	do. per 100	1	0	2	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes doz.	3	0 to 4	0	0	0
Asparagus 100	7	0	20	0	0
Beans, Kidney 100	0	0	3	0	0
Beet, Red doz.	2	0	3	0	0
Broccoli bundle	0	6	1	6	0
Brns. Sprouts $\frac{1}{2}$ sieve	2	0	2	6	0
Cabbage doz.	1	0	1	6	0
Capsicums 100	0	0	0	0	0
Carrots bunch	0	6	0	8	0
Canflower doz.	3	0	6	0	0
Celery bundle	1	6	2	0	0
Cucumbers each	1	0	2	6	0
Endive doz.	1	0	0	0	0
Fennel bunch	0	3	0	0	0
Garlic lb.	0	8	0	0	0
Herbs bunch	0	3	0	0	0
Horseradish bundle	2	6	4	0	0
Leeks bunch	0	3	0	0	0
Lettuce per score	1	0	1	6	0
Mushrooms pottle	1	0	2	0	0
Mustd. & Cress, punnet	0	2	0	0	0
Onions per bushel	3	0	5	0	0
Parsley per sieve	4	0	5	0	0
Parsnips doz.	0	9	1	0	0
Potatoes bushel	4	6	5	6	0
Radish doz.	4	0	6	0	0
Radishes doz. bunches	1	0	1	6	0
Rhubarb bundle	0	6	1	0	0
Savoy doz.	1	0	2	0	0
Sea-kale basket	1	0	2	0	0
Shallots lb.	0	8	0	9	0
Spinach bushel	2	0	4	0	0
Tomatoes per doz.	0	0	0	0	0
Turnips bunch	0	4	0	6	0

TO CORRESPONDENTS.

.. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix upon the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (A. C. J.).—If you enclose 5s. 11. in postage stamps with your address and order "The Fern Manual," and 7s. in postage stamps and order Paul's "Rose Garden," you will have them sent to you free by post. (P. G.)—A supplement to the "Cottage Gardener's Dictionary" will be published this spring, and will afford the information sought.

FLOWER GARDEN PLAN (H. J.).—We cannot undertake the planting; all that we ever can do is to point out any errors in the planting intended.

BOTANICAL ARRANGEMENT OF PINES (Reader).—Consult Gordon's "Pinetum," or any botanical work which includes the Conifere. We cannot find space for mere botanical details.

GARDEN ENGINES (K. M. H.).—Nothing new. Any one of those mentioned in our advertisement columns is good, and you can suit yourself as to price. Any maker will send you a catalogue if you apply for one.

ARTIFICIAL MANURE FOR POTATOES (H. C.).—Apply superphosphate of lime and sulphate of magnesia, 4wt. of the former mixed with 2wt. of the latter. Sow the mixture over the surface, just before digging, at planting time.

LOQUAT TREES IN NEW ZEALAND (C. Torquay).—The old gardener was not so far wrong as he might have been. The botanical name is *Eriobotrya japonica*. The tree is well known, and it is not surprising that it ripens its fruit in New Zealand, for it has fruited in England with very slight protection.

POLYANTHUS (T. Mellon).—Such variations are very common, and render the variety of no value as a florist's flower.

NEPETA NIEPOTOS.—"L. C. F." and other correspondents ask if it grows tall, and where it can be had. We shall be obliged by information about it, for we do not know it by the name of nepetos.

DOUBLE WHITE HEPATICA.—"R. E. W." wishes to know where the double White Hepatica and Nepeta nepetos can be purchased.

HARTLEY'S ROLLED GLASS (C. E. S.).—The plants will do very well under a roof so glazed. Whoever advised you to oil or to paint it knew nothing about what he ventured to advise upon.

PELARGONIUM LEAF (Mrs. N.).—It is pretty, but many are more beautiful. You can enclose a leaf to any of the principal florists who advertise in our columns, and ask their opinion.

PINE APPLES IN A SMALL HOUSE (W. M. B.).—You will not have room in your 3-foot border for more than one row of fruiting plants, and for the length of house you name six plants will be sufficient. In the other bed you may have a row of succession plants and one row of suckers. Fruiting plants might be put in each bed; but if of any size you could not have succession plants in the same bed, and if the fruiterers are small only nursing plants could be placed between them in the bed.

MONTSERRAT AND BLACK JAMAICA PINE APPLES (Taffy).—The true Black Jamaica is the same as the variety also known as the Montserrat, and some still call it Montserrat to distinguish it from the Brown Antigua, or New Black Jamaica. The Black Jamaica is thus described:—"Leaves long, narrow, dark green, tinged with brown, slightly mealy; spines small, thick set; flowers purple; fruit oval, dark brownish yellow; pips middle size, flattened in the centre; flesh very firm, pale yellow, rich, juicy, and highly flavoured. It swells well in winter, and is one of the best sorts for winter fruiting, being good at all seasons; but it is a slow grower." The description of the Brown Antigua or New Black Jamaica is:—"Leaves long, narrow, light green mottled with dark green; spines small; fruit pyramidal, very slightly mealy, dark orange; pips middle-sized, prominent; flesh pale yellow, sweet, rich, and highly flavoured. It does not swell its fruit in winter nearly so well as the Black Jamaica, and is best for summer fruiting." Some call the Black Jamaica the Montserrat, and the Brown Antigua or New Black Jamaica the Black Jamaica, and others call the New Black Jamaica the Montserrat. The

variety with the flat pips is the Montserrat, or Black Jamaica, and the variety with prominent pips and pyramidal fruit is the New Black Jamaica. The "Cottage Gardener's Dictionary" can be had free by post from our office for 5s. 8d.

ARAUCARIA IMBRICATA (Idem).—This makes new growths every year; if recently removed it may remain inactive for a season, but as a rule a progressive annual growth is made.

PRUNING TEA-SCENTED ROSES (G. H. M.).—To have blooms at the end of June from plants grown under glass, these should at once be pruned. Allow them a few days' rest, and then bring them on very slowly at first, giving an abundance of air.

TREATMENT OF CYCLAMENS AFTER FLOWERING (Caroly L.).—The plants having been kept under glass should be gradually hardened-off, and in May or early in June they may be placed out of doors in an open situation, but shaded from the midday sun. The pots should be plunged to the rim, and a thin covering of cocoanut refuse or leaf mould scattered over them, so as just to cover the crown. They may remain until September without water; then pot them, and remove them to a cold frame, and to a greenhouse before severe frost. Do not dry them off and store them away. It is their destruction.

HOLLY NOT PRODUCING BERRIES (L. B.).—We are unable to account for your large Holly not producing berries. We think digging a trench all round the tree at a distance from the stem of half its height, and deep enough to reach the roots, which should all be cut, would promote the production of fibres and give you better ripened wood, and the flowers would probably set. The trench should be filled level, the old soil being returned. Now is a good time to do the work. The grafting of a shoot from a berry-bearing tree would not cause the tree to produce berries, but the graft would no doubt do so. You may graft when the large tree is beginning to grow, early in April being a good time.

THINNING FRUIT BLOSSOMS (E. A. S.).—As your trees are very full of blossoms we would advise you to thin those out before they expand. Remove the smallest flowers, or rather those likely to be the smallest, judging from the small size of the buds. There is no fear of your removing those that would set, and if you do leave some that may not set, you will yet have more than enough. It is likely if you leave all the blossoms that they will not set, or, if they do, the tree will be so weakened that the fruit will fall shortly after setting. Thinning the blossoms is a very desirable practice when the trees are weak, and the blossoms exceedingly numerous; otherwise for trees that are vigorous and not excessively furnished with bloom, it is not necessary.

CULTURE OF MAIDEN-HAIR FERN (E. M. H.).—Your Maiden-hair Ferns should have a season of rest at least once a year, and of not less than three months' duration. We do not mean that the plants are to be kept dry during that time, but in November, December, and January they should have no more water than is necessary to keep the soil moist. During that period a temperature of from 50 to 55 at night is quite sufficient. We are not surprised at their growing weakly, a heat of from 60 to 65 during winter is much too warm for nine-tenths of the Ferns in cultivation; from 50 to 55 will be quite sufficient to secure a good growth in spring and summer. We would advise the cutting-off of the old fronds as soon as you perceive the young fronds are making their appearance, and this being done early there is no danger of cutting the young fronds along with the old ones. When at rest the soil should be kept moist, but water will not be required other than once a week in winter. We do not advise cutting away the old fronds immediately they commence turning yellow, but between that time and the recommencement of growth. Alford a position near the glass, with shade from bright sun, and a moist, moderately warm, but not very close atmosphere.

WATERING ORCHIDS, GLOXINIAS, AND ACHIMENES (Subscriber).—Orchids should be watered overhead, and at the roots as well if the compost is not kept sufficiently moist by sprinkling overhead. In a greenhouse no water will be needed in winter beyond a slight sprinkling every morning if it be necessary to employ fire heat. When Orchids begin to grow water will be necessary, for keeping the compost moist, but avoid making it excessively so during the early stages of the plants' annual growth, otherwise the young growth is liable to die off. When in full growth water copiously, and the atmosphere cannot be kept too moist; but give a fair amount of air. When they are done growing, gradually leave off watering. In dull periods in winter no watering at the roots nor sprinkling overhead will be necessary; indeed, you cannot keep them too dry, but do not allow the pseudo-bulbs to shrivel from excessive dryness. Gloxinias and Achimenes should be kept dry in winter; and if the pots are placed on the floor of the house, only an occasional sprinkling over the pots will be required to prevent the soil becoming dust-dry, in which case the tubers wither, which is bad. In summer, when growing, the soil should be kept moist, increasing the supply with the growth. When in vigorous growth, and until after flowering, they should be well supplied with water, the soil never becoming so dry as to affect the foliage.

PEACH TREES INJURED (Disgusted).—We consider that the wood of your Peach trees has been destroyed by dressing or syringing with some destructive composition. If the trees have not been dressed with any insect-destroying composition or solution, we should, from the immaturity of the wood, ascribe the dying of portions of the shoots to gumming, for which there is no remedy except planting in better-drained and poorer compact. We never saw wood worse ripened. The partly green or fresh portion above the decayed wood will not do any good. If the trees are as much decayed in every part as the shoot sent, they will not do any good this year, if ever.

DALE'S CONQUEROR CUCUMBER (H. E.).—It is a first-rate Cucumber, of large size, very handsome, and of good flavour; very desirable for exhibition purposes, and for use where a Cucumber is not wanted every day. It does well in a frame, and may be had through any seed-man.

PASSIFLORA RACEMOSA PURPUREA (Walton-on-Thames).—It is a greenhouse climber, and will not thrive out of doors except in a warm situation and against a south wall, protection being given in winter. The flowers are a bluish purple tinged with green.

CLIMBERS FOR NORTH ASPECT (Idem).—Nothing would look and succeed so well as Ivy; Ruger's Ivy having large distinct leaves is very fine. Crataegus pyracantha, which is very handsome on account of its clusters or bunches of red berries in autumn, would also succeed. Roses would not do any good, Jasminum nudiflorum, flowering in winter

and early spring, would succeed well. It has yellow flowers, but it is deciduous.

DOUBLE DAISIES CULTURE (G. S.).—Double Daisies do best in a border shaded from the midday sun. They should have a rich, moist, and rather stiff soil. They should be divided after flowering, and watered copiously in dry weather. The soil should be well drained, for they are impatient of wet in winter, and equally so of drought in summer.

HERBACEOUS PLANTS (H. N. C.).—*Viola cornuta*, *V. pennsylvanica*, *V. calcarata*, and all the varieties of *V. odorata*; *Trollius europæus*, *T. napellifolius*, *Spirea filipendula plena*, *Scilla sibirica*, *S. bifolia*, *Pulsatilla angustifolia rubra*, *P. officinalis*, *Draba aizoides*, *Dicentra spectabilis*, *Doronicum plantaginifolium*, *Erigeron grandiflorus*, *Galium boreale*, *Delphinium formosum*, *D. Belladonna*, *D. grandiflorum*, *D. alopecuroides*, *Chelidonium Marshallii*, *Convallaria majalis*, *C. polygonatum*, *Campanula aggregata*, *C. carpatia*, *C. speciosa*, *C. pusilla*, *C. nitida plena*, *Asclepias tuberosa*, *Anthriscus grandiflora*, *Aster alpinus*, *A. tataricifolius*, *A. tenuifolius*, *Betonica grandiflora*, *Aquilegia caryophyllifolia*, *A. grandiflora*, *Aconitum paniculatum*, *Anemone stellata fulgens*, *A. japonica* and varieties *vitifolia* and *Honorine Jobert*, *A. apennina*, *Alyssum saxatile*, *Ajuga alpina*, *Agrostemma coronaria*, *Achillea millefolium rubrum*, *Geranium sanguineum* and *lanceolatum*, *Geum coccineum* its variety *grandiflorum*, *Helleborus niger* and variety *major*, *Hepatica triloba* and *angulosa*, *Hypericum calycinum*, *Iberis saxatilis*, *I. Tenoreana*, *Iris germanica* vars., *I. pallida*, *I. reticulata*, *Lilium aurantiacum*, *L. candidum*, *L. colchicum*, *L. chalcedonicum*, *L. Martagon*, *L. tenuifolium*, *Lotus corniculatus flore-pleno*, *Lycinis viscaria splendens*, *L. Haageana*, *Mimulus roseus pallidus*, *Orobis vernus*, *Pæonia albiflora* vars., *P. officinalis* vars., *Phlox verna*, *Polemonium ceruleum*, *Potentilla Menziesii*, *McNabiana*, and *bicolor grandiflora*. All the above will grow in your cold climate.

ASPARAGUS PLANTING (Idem).—The beginning of May is the best time to plant Asparagus, but it may be planted now.

STRAWBERRIES UNPRODUCTIVE (P. L.).—Your light loamy soil ought to be very suitable for Carrots. Trench the dung you use to the bottom, say to 16 or 20 inches from the surface, and after sowing roll firm. The ground being so light, give, as you have done, plenty of manure to your Strawberry plot; but after preparing the ground tread it firm and roll on the surface before planting. Tread well after planting, then mulch between the rows with rotten dung, and never dig until you dig down the plants, but merely fork an inch deep or so every season, add fresh mulching, tread if not firm enough, and we will almost guarantee that you will gather plenty of Strawberries, if you plant from fruitful plants.

PLANTING MUSCAT HAMPER VINE (H. W.).—We would prefer planting the Muscat Hamburgh, or Black Muscat of Alexandria, in your late and cooler house.

HEATING A GREENHOUSE.—CUTTING DOWN RHODODENDRON STOOLS (E. M.).—We consider that the proposed quantity of piping will be ample for the house. We would certainly lose no time in cutting down the central part of your Rhododendrons, as the outsiders near the ground are doing so well. Most likely the central parts will break strongly. If the branches are large we would cut them neatly, and then daub the cut part with white lead paint, darkened so as not to attract attention. This would prevent damp, &c., acting on the cut part.

FLOWER GARDEN PLANTING.—We must decline to plant beds; we merely criticise proposed planting. As you prefer bedding Pelargoniums you could, as you propose, fill the centre with Mrs. Pollock, and the other four beds—two with Christine and two with Alma. We would prefer for the large central bed a string of *Cerastium* next the grass, then a broad band of *Lobelia erinus speciosa*, and in the centre all through Mrs. Pollock; for the two side beds Christine Pelargonium, edged with Purple King Verbena, and two beds of Little David edged with variegated Alma or Bijon; the former preferably. (J. L.).—With a row of *Centaurea* outside, and then a row of *Colerus*, we would prefer *Cerise Unique* or *Stella Pelargonium* for the centre of the bed to Bijon, as that would make too much of a light colour. One of the most striking beds we ever saw was formed of the dark *Colerus*, with a broad margin of white-leaved *Cineraria*, or *Centaurea*, we forget which, at Woburn. It was as a single bed very fine, the *Colerus* being healthy, and its richly coloured leaves of a fine satiny texture.

ERECTING A SMALL CONSERVATORY (M. E. G.).—Ribbed glass or rough sheet will let in plenty of light for the roof of your conservatory, and you will require no shading. With common British plate we have seen the same result accomplished by painting the glass inside with a bluish tint, which looked very well, answered for the plants well, and needed no shading. The front glass you had better have clear with thin blinds. As to the flooring, as a matter of taste, ornamental richly coloured tiles will always look better than flagstones; but the latter will stand the roughest treatment.

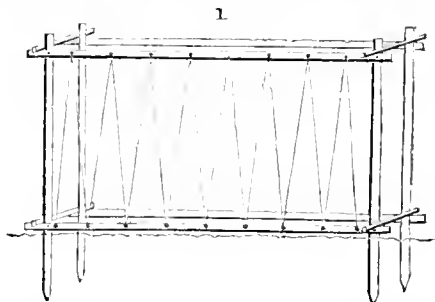
CLIMBERS FOR A SMALL CONSERVATORY (Idem).—*Ipomœa Leatii* will do in a cool conservatory that is heated so as seldom to be below 45° or even 40°. Lower than that it will die. We presume your house is to be heated, and then you will grow *Lapageria rosea* well if you give it plenty of drainage, a rather shallow soil, and plenty of water. All the *Tasconias*, *Kennedys*, and hardier *Passifloras* would do well in such a house. When once they are established they will give plenty of shade in summer. *Habenorrhynchus clemeas* is a fine plant for blooming all the winter, and *Mandevilla suaveolens* yields a profusion of white flowers in summer.

GROWING CUCUMBERS WITHOUT ARTIFICIAL HEAT (Tyro).—You may grow Cucumbers in the yard with the help of the frame without artificial heat, by elevating the frame sufficiently behind to catch the rays of the sun as much as possible. Bring the earth in by the beginning of May, turn it over frequently so as to get the soil warm, and keep the warmth in after a warm day by throwing a mat or rug over the glass. By the end of May or the beginning of June turn out your plants. You had better have strong plants from some neighbour; failing that, sow near the chimney in the end of April, and place afterwards under a bell-glass or thin paper funnel in the window of a warm room. If you obtain a few plants well hardened-off, they will suit you best. You may have a great deal of heat if you take advantage of what the sun affords you. We are supposing you want to grow good kinds. For short common kinds you would have little necessity for being so particular. Tomatoes may be grown very successfully in pots and boxes, and so they might against the walls or fences in such a yard.

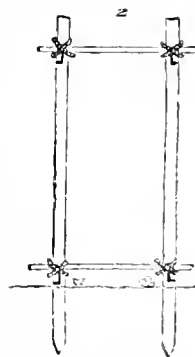
CAUSE OF DEW ON VINES IN THE MORNING (E. W.).—If you mean the moisture condensed on the leaves of Vines under glass, the cause is that the leaves are colder than the air of the house, and the moisture in its air is consequently deposited upon them. Read Johnson's "Science and Practice of Gardening." It explains the formation of dew, and the reason of most phenomena in horticulture.

WEEDS ON LAWN (H. D.).—Send us specimens in flower, and we will tell you what they are. We cannot guess, for they vary with the soil. Daisies are best eradicated by cutting them out of the turf by means of a knife, taking care to cut through the roots an inch or more below the surface. The grass soon covers over the vacant spots; or to hasten the process of covering, sprinkle half a dozen seeds of Suckling on each vacancy.

PEA SUPPORTS (An Anxious Inquirer).—The best answer we can offer is the following extract from one of our early volumes:—"We have had them in use now without repair for three years, and can strongly recommend them. The only alteration we find desirable is that, instead of



having the supporters fixed upright, as in these sketches, they should lean inwards, and their tops touch in this manner A. We paid 6d. for each hurdle of unplanned deal, and had it painted over with coal tar. For the purpose of obtaining a more durable, and, therefore, less expensive supporter for Peas, we have had a kind of hurdle made with only a top and bottom bar, and these bars pierced with holes 6 inches apart, as represented in the annexed drawing, fig. 1. To prevent confusion in this we have only shown one of the hurdles as pierced with holes, and with string passed through them; but, in practice, both are strung alike. Each hurdle is 5 feet long, and 3 feet wide between the two bars; for tall-growing Peas the width might be more. The upright ends are made of deal, and are 4 feet long and 2 inches square. Eight inches of the lower ends are charred and pointed, because they have to be fixed in the ground. The side bars are 2 inches wide and 1 inch thick, also of deal, sunk into the uprights, and then nailed. The Peas are sown in double rows, with a space of 9 inches between the rows. The hurdles are strung with stout wetted string, because when dry it becomes tighter, and rain does not slacken it afterwards. A hurdle is put outside of each row of Peas, and is made steadier by being tied to the one next to it, and the whole made firmer by being united to those opposite by pieces of wood about 1 foot long, tied as shown in fig. 2.



HEXAGONAL VINETTES (H. G. M.).—Write to Dr. Newington, The Vinery, Ticehurst, Sussex.

SEEDLING BROCCOLI (G. Cooling).—The heads are very white, compact, and firm, and remarkably pyramidal in form, and it is the more useful as being a second-early variety, not coming in all at once, but, as you say, allowing of being cut from the same bed for three successive weeks.

ARBUTUS PROPAGATION (E. G.).—You may put in cuttings of the shoots, selecting moderately strong shoots of the current year, their points being taken when in the condition of half ripe, or when the base has become firm. The cuttings may be about 4 inches long, and should be inserted in a capot of equal parts sandy peat and silver sand, previously cutting them transversely below a joint, and removing the leaves from two-thirds the length of the cuttings, which part is to be inserted in the soil. They should be placed in a mild hotbed, keeping moist, close, and shaded from bright sun; or the cuttings may be inserted in a cold frame, which should be kept close until a callosity is formed. It is rather difficult to increase the *Arbutus* from cuttings. Layering is a more certain mode of propagation. Seeds of the kinds you name are not to be had.

APPLE TREE SHOOTS DISEASED (C. C. E.).—The shoot enclosed to us appears to have been attacked by mildew. The best remedy would be to take up the tree, well trench the ground, and replant. Flowers of sulphur should be applied to the shoots when the symptoms first appear and be continued as necessary.

FIXING WIRE TRELLISES TO WALLS (Idem).—We have several hundred superficial yards of wall covered with wire for fruit-tree training, and have no difficulty in fixing them. We simply have a plate of iron 14 by half an inch, the height of the wall, and with an eye screwed into the plate at every 4 inches, the first eye being put in the plate 9 inches from the ground. These plates are made secure to the wall by means of hold-fasts at each end, and the wire being made straight by straining, is fastened to the eyes in the iron plates at the end least convenient for straining. Previously to doing this a number of hooks about 3 inches long, flat half an inch by quarter of an inch, with a hole in the flat side of the hook to allow of the wire being passed through, are driven into the joints of the brickwork at a distance of from 3 to 4 feet apart,

and so as to maintain the wires three-quarters of an inch from the wall. The wire is then strained and made secure to the hooks in the plate of iron at the other end, and it has a neat appearance. No. 10 galvanised wire is used, and the hooks are galvanised also, so that no point is required except for the iron plates at each end. We have used many yards of diamond netting for placing against walls, the netting having a sort of rod-framing around it, which it was only necessary to secure to the wall with holdfasts, with the shoulder made the reverse way, and driven in; the netting could be placed any distance from the wall by driving in the holdfast little or much, and having placed it as near the wall as desirable, the flat portion of the holdfast or hook could be bent over the rod or frame of the wire, and so made secure. For fruit walls we prefer horizontal wires, but for plants the wires crossing each other obliquely. The work is in the latter case neater, but more than double that of horizontal wires.

CACCI INFESTED WITH SCALE (J. A.).—Your plan of picking the insect off is a slow but sure means of clearing the plants. You may, after picking off all you can, wash the plants with a sponge, using a solution of 1 ozs. soft soap to the gallon of water. If you cannot sponge them on account of the spines, immerse the plants for a minute in the solution at a temperature of 120°. If you cannot immerse them, syringe them with the solution at a temperature of 140°, and when the plants become dry syringe them with water of the same temperature as the soap solution.

SCALE INSECT (Ignorance).—There are several sorts of scale; but the most likely one for you to have is the brown scale, which, however, rarely attacks *Pelargoniums*. It is like a small oblong speck, and lies quite close to the shoots or leaves, covering them with a sticky substance, which ultimately becomes black. The best remedy is to pick it off with a knife whilst young, and to keep the plants clean by frequently sponging the leaves and stems with a solution of 4 ozs. of soft soap in a gallon of water. See the preceding answer. Do not use the soap solution for the *Pelargoniums*, for the scale we are sure will not long remain upon them, and we think it is communicated to them by plants more subject to attack. Placing the plants out of doors from June to the end of September or early in October, will free them of scale.

VENTILATING A SMALL GREENHOUSE (Idem).—The sash opening in front and the door opening will be sufficient ventilation; but we should have liked it better if you had had one or two openings at the highest point of the roof, as your house could then have had ventilation in dull and frosty weather when you could not well have the door and sash open.

STANDARD MIGNONETTE (A. H. F.).—The seed should be sown now, a few seeds in the centre of a small pot, and be placed in a mild hotbed; and when the plants are up keep them near the glass, and so soon as you are able to decide upon which are likely to be the best, remove all from the pot except one—the strongest of course. When the plants are 2 or 3 inches high remove them to a cool house, placing them near the glass, and afford an abundance of air with a moderate amount of water; but see that they do not suffer for want of it. When the pots become filled with roots the plants should be shifted into others a size larger, and this repeatedly until you have them in 9-inch pots if you require them so large; if not, a 7 or 8-inch pot will do. A neat stake should be placed to each plant, and the plant as it grows loosely tied to it. The flowers should be pinched-off as they appear, and the side shoots stopped

within one or two joints of the stem, and at every leaf afterwards, always taking care to secure the best of the shoots for a leader, training it to the stake; when it again shows flower pinch it off; the best of the side shoots, and the uppermost of course, being trained in its place without being stopped until it shows for bloom. Proceed as before until you obtain the height of stem required; then allow the side shoots for 2 or 3 inches down the stem to grow, stopping them, however, at the third leaf, all the side shoots below this being kept closely pinched back to one joint, and when the shoots of the head have made new growth after the first stopping, the shoots lower down may by degrees be removed; but we prefer to retain them, as the stem is prettier feathered than bare. The shoots of the head will need to have the flowers pinched-off, and this should be practised until September, when the plants should be placed under glass.

GLADIOLUS BULBS (Gladiolus).—You may dip the bulbs in a mixture of soot and sulphur without injury, and it will make them very distasteful to predatory vermin.

SUPPORTING BLOOMS OF CUT ROSES WITH WIRE (Idem).—It would be a disqualification to a stand of cut roses to support the petals by a ring of wire concealed by the foliage. It being habitually done by exhibitors is no reason for others imitating so dishonest a practice.

CORRUGATED GLASS FOR GREENHOUSE (J. H.).—We have had some experience with the rough glass you name, but we cannot say that we like it; indeed, we find no glass equal to 26-oz. sheet, third quality; and as to shade, we consider glass so full of impurities as to cause gloom very injurious to vegetation. It is best to use clear glass, and shade with tiffany in summer. The plants cannot have too much light from September to April.

CLIMBERS AND TRAILERS FOR ROOTERY (New Subscriber).—The best of all will be the small-growing green and variegated *Lyca*, Virginian Creeper, *Cotoneaster microphylla*, *Convolvulus sepium roseus*, *Vincetoxicum*, for trailing, *Clomitis viticella*, *C. Helena*, *C. montana major*, *C. vitalba*, *C. viticella venosa*, and *C. florida plena*, *Caprifolium odoratissimum*, and *C. periclymenum*.

HOT-WATER PIPES FOR BOTTOM HEAT (J. H. F.).—Two 3-inch hot-water pipes will be sufficient for bottom heat for your Cucumbers; but instead of 3 inches of stones we would cover the pipes with slates and form a sort of chamber, then place on the slates 3 inches of stones for drainage, and then the soil; 1 foot deep will be ample.

CRICKETS (M. A. H.).—Please to refer to page 202 of our last number on.

DWARF TROTTLE (Notttingham).—There are many dwarf varieties. Any of them can be obtained of the principal florists who advertise in our columns.

NAMES OF PLANTS (H. H. H.).—1, *Cheilanthes fragrans*; 2, *Pteris serrulata*, (*H. B. Z.*)—1, *Adiantum formosum*; 2, *A. carolinianum*; 3, *A. capillus-Veneris*; 4, *Pteris serrulata*; 5, *Polystichum angulare*, var.; 6, *Selaginella Kraussiana*; 7, *S. Martensii*; 8, *Pteris cretica albolineata*; 9, *Onychium japonicum*. (*H. M.*)—1, *Asplenium bulbiferum*; 2, *Cheilanthes lundbergii*; 3, *Blechnum occidentale*; 4, *Notochorda nava*. (*H. E.*)—You have sent indeterminate scraps. (*Ellis*).—*Daphne mezereum*, (*H. B. E.*)—*Echeveria acutifolia*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending March 24th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 18	30.222	30.069	51	25	48	47	N.W.	.00	Fine; clear and fine; fine and very clear.
Thurs... 19	29.842	29.810	51	25	47	45	S.W.	.00	Overcast; densely overcast; fine at night.
Fri... 20	29.869	29.828	50	40	46	44	S.	.00	Overcast; very dull; overcast and cold; fine.
Sat... 21	30.020	29.949	57	39	47	44	S.	.00	Cloudy; overcast; clear and fine.
Sun... 22	29.982	29.750	53	35	48	45	S.E.	.00	Overcast; slightly overcast; fine, brisk wind.
Mon... 23	29.746	29.743	50	28	48	45	N.W.	.08	Clear and fine; cold wind; slightly overcast; fine.
Tues... 24	29.922	29.859	45	21	46	47	N.W.	.50	Slightly overcast; fine; clear and fine, frosty.
Mean	29.958	29.808	51.00	30.43	47.14	44.71	..	0.08	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

LIGHT AND DARK BRAHMAS.

SOME remarks upon a former communication of mine on this subject by my friend Mr. Crook (for I trust that our little differences of opinion will never alter the friendly relations which have always existed between us), make a word or two in reply imperative, as they imply that my comments on the Birmingham birds were founded on mistakes in recollection.

Mr. Crook will, however, look in vain for any observation of mine that the cup cock belonged to Mr. Pares. I never mentioned or implied his owner's name, simply speaking of him as "the first-prize Light Brahma cock;" any mistake in memory is therefore his, not mine. And as to "anomalies," what shall we say to Mr. Crook's "noting" the bird as of "good colour, both surface and ground," and subsequently remarking that "we all agreed that his surface colour was the worst in the class?" I certainly understood him to object to the bird on account of colour solely—if I misunderstood him I beg his pardon—and I see that his notes describe him as "not a good shape." Well, here certainly is a difference of opinion as to

the proper shape of a Light Brahma. I commended his shape, judging him simply as a Brahma by the Brahma standard; and therein I apparently coincide with Mr. Teelay, in my opinion the best judge of Brahmas of any man living. Mr. Crook says he is "not a good shape," having reference to the modern standard of Light Brahmas as now shown. May I venture to suggest that this standard may be a false one, and may possibly account for the present position of the Light classes? If there be such a thing, and there is—for Miss Watts is quite correct in maintaining that the Brahma is but one breed, as Cochins are—as a true Brahma type or standard common to both colours, and the Dark fanciers on their part do their best to keep to it and perfect it, whilst the Light are following after some totally different idea, it is not difficult to predict what the result must be when a real Brahma judge has to decide between them.

With regard to the comparative merits of the Birmingham cockerels, I made no remark upon them whatever; and as it does not touch on the subject, shall not in any way criticise Mr. Crook's remarks.

But returning again to the point at issue, how singularly does Mr. Crook's challenge corroborate the opinions I have expressed. He will show twelve Light hens against twelve

Dark—but on what conditions? “Age, perfection of colour, and markings” to be chief points—the very thing which “Y. B. A. Z.” and myself contend has led to the present state of matters. Not a word of even size, and, much less, not a word of shape or Brahma symmetry. Now this latter point—symmetry, or perfection of form and characteristic points, is the very A, B, C, or foundation of all excellence; but it is to be swamped by colour, as, alas! it too truly is!

So that with regard to Mr. Crook's opening paragraph, I do emphatically repeat my opinion that, judged by the only real standard, Light Brahmas are a “degenerate race;” that (as a class of course I mean—single good birds I do see), they are far inferior to the Dark in purity of race, comb, head, shortness of leg, depth of keel, and squareness of build. But do not let me be further unfairly charged with maintaining that they are “difficult to breed true to characteristics.” This I deny. It is as easy to breed one Brahma as the other, only a true and characteristic standard must be sought after in order to attain success. This many of the Dark breeders have kept in view, this nearly all the Light breeders have in a great measure discarded. And as to describing us who assert the inferiority thus produced as persons who have “not properly understood the breed, and as a matter of course have not been successful with it,” Mr. Crook must surely forget that the very origin of the whole discussion is the fact that he and other admirers of the Light breed have “not been successful with it” themselves! We think—we know that we can point out the reason; he, despite of the well-known general principle, can or will see none.

Mr. Crook's remarks on three different original strains and their characteristics, open a further field for profitable remark, and one in which I have taken great interest, but can only make one or two observations which bear upon the matter in hand. We have first “Mr. Burnham or Dr. Bennett” (though Bennett's, by the way, was quite distinct, characterised by the “creamy tinge,” but having “the defect of being too white down to the skin.” Here at once is evidence “presumptive” of a Cochin cross; and what do we find? Why, as all know, Burnham with unblushing effrontery acknowledges that his birds were produced all from Shanghae hens. Similarly his Dark Brahmas were produced from grey Cautagong coeks crossed with Cochins. In spite of the immense mass of evidence tending to show that Brahmas are a distinct race, that some of the so-called “original strains” were thus produced there can be no doubt; and hence much of the perplexity which awaits all who candidly investigate this most interesting subject. Hence also the Brahmas without the “gronse head,” which Mr. Crook most truly says are still bred in America, though the gronse-headed Brahma is also well known there. In fact, between the original pure-bred Brahmas, the “original” made strains such as Burnham's (which latter, Dark especially, caused infinite disappointment, rarely breeding two birds alike), the more modern crosses with Dorkings and Cochins to gain points of colour, and their various intermixtures to subdivisions, any who conscientiously investigate the origin and history of Brahmas will find that they can discover “very little to swear by, but a great deal to swear at,” and also a great deal of reason for much difference of opinion.

Let me take the opportunity of assuring Mr. Pares that I never meant to deny the existence of many excellent birds with the proper grey bottom colour; nor would, I think, my letter be so read. I simply meant, and I repeat, that I have parted the plumage of very many Light Brahmas with the result stated.—Nemo.

Here the controversy may end. We see no valid reason why Light and Dark Brahma Pootras are not entitled to cups and other separate prizes, just as much as Buff, Partridge-coloured, and other varieties of Cochin-Chinas.—Eds.]

BRAHMA POOTRAS—DORKINGS AND THEIR CROSS-BREDS.

I AM in possession of a Dark Brahma pullet, one of a pair hatched from eggs laid by the same hen on the 10th of May, 1867. They both began to lay in the second week in November. One of them I was obliged to kill on the 10th of February, as her egg organs became badly inflamed. She laid an egg nearly every day from the 19th of November to the day before I killed her. The other has continued laying up to the present time without becoming broody, or ever missing more than one day at a time, and that very seldom. During January she

missed six days, in February none, in March two to the present time. I kept no account of the days when she did not lay in November and December; but allowing her to have missed seven in December and four in November, she will still have laid 115 eggs to the 23rd of March, which is, I consider, marvellous work, as she will not be twelve months old until the 10th of May. Her eggs are large for a Brahma, the usual weight being 2½ ozs.

I find a great difference in the laying and tendency to incubate of my Brahmas, although all are equally pure bred. One of the pullets from the same brood as the other two began to lay about a fortnight before them, and has been broody twice; the latter time I sat her on some eggs, and her chicks are now nearly a week old.

The other breed I keep are dark-coloured Dorkings. I find that the pullets begin, as a rule, to lay rather earlier than the Brahmas, though they oftener miss a day, and are more influenced by changes of the weather, severe cold causing them to cease laying almost entirely, while the Brahmas do not appear to be in the least affected by it.

I may mention as a comparison of the early-laying powers of these breeds, that on the 10th of March last I had a mixed brood hatched; among them were three Dorking pullets, which, singularly, each laid their first egg on the very day they were five months old—viz., on the 10th of August. The Brahma pullet did not lay until from a fortnight to three weeks later.—R. W. BEACHEY, *Kingskerswell, Devon.*

BARNDORF FOWLS.

At a recent meeting of the Boroughbridge Agricultural Association, Mr. Gaunt read a paper on barndoor fowls.

He said that twenty years ago the very proposal to read a paper at an Agricultural Society like this, on the subject of breeding and managing barndoor fowls, would have been looked upon by the kindly-disposed of its members with curiosity, as something very singular, and by others with a feeling very much akin to scorn. In those days nothing would have been—nay, even in these days, nothing is deemed—more derogatory to the British farmer than to suppose him capable of taking any interest in those beautiful and useful inhabitants of the feldyard, further than to help his goodly spouse to a decision as to whether the couple of capons for dinner should be roast or boiled, or to express his anxiety as to the number of minutes his eggs should be cooked for breakfast. This should not be so; for the very fact that enormous numbers of eggs and poultry are annually imported both from France and Ireland into this country, must show that the production of them is a source of profit, or the supply would naturally cease. The question at once arises, Why should we be dependant upon our neighbours for sending us the very commodities which we have the power not only to produce, but to produce in the highest perfection? for it has been truly said that the English farmyard is the paradise of poultry. One reason is, that the rearing of poultry in large numbers has never been thought worthy the consideration of the farmer himself, though there is no doubt that it may be made a source of great profit, with a very slight outlay of capital; and another cause is the utter disregard that has been paid to the judicious breeding and crossing of the various kinds of fowls. They are allowed from year to year to run on in the same folds without any admixture of fresh blood, and in consequence become puny, small, and weakly, so that half the number hatched are unable to struggle to maturity, from their excessive liability to the numerous diseases which poultry “flesh is heir to.”

During the past few years the magnificent poultry shows which have been held in most of our principal towns and villages, have drawn much attention and given an impetus to the breeding of poultry, and great has been the admiration excited by the pure-bred specimens of the numerous varieties. What, indeed, can be more beautiful than the thorough-bred Game cock, with his flashing colour, his serpent-like head, and his lordly carriage, showing not only that he is, but that he knows himself to be, the true aristocrat of his race? Other classes are not behind him in beauty of a different kind; truly they have not his magnificent plumage or defiant eye, but the comfortable shapeliness of the Dorking and the Brahma Pootra hens, suggestive of their motherly propensities and of their satisfactory appearance on the table, speaks volumes in their favour. But these thorough-bred birds, valuable as they are, and profitable also, are not what a farmer should have as barn-

door fowls. They require far too much care and attention to repay him, and eggs at one shilling each (as many are charged from prize birds), are quite too dear to be trusted to the care of farmers' lads. The name "barndoor fowl" suggests in itself the mode in which a farmer expects his poultry to pick up a living—literally by eating the grain dropped from thrashing and various other farming operations, and the seeds and insects procured by scratching in the dunghill, which, besides feeding, causes them to become public benefactors; for the very seeds they eat would, if returned to the land, propagate a rank crop of weeds.

The question now arises, What cross or crosses of pure-bred fowls will produce at once the largest, best-flavoured, and healthiest chickens? The one I strongly recommend is that between the Game cock (chosen rather for its size and abundant plumage than for its warlike proclivities), and the Grey Dorking hen. It is generally admitted that the Game bird is the best for the table; it is also a good sitter, and an excellent mother; but it lacks size. This quality the Dorking gives, and the progeny of the two grow to great weight, frequently quite as large as the pure-bred Dorking itself. They lay and sit well, and the mixture of the Game blood gives a better flavour to the chickens. A further cross in the following year will be advantageously made with the Brahma Pootra fowl, and the third year it will be found wise to turn a few young Game cocks or Malays into the foldyard, so that by continually introducing fresh blood is avoided that most pernicious system of breeding in-and-in, to which I have previously alluded. There are many crosses from which good fowls may be obtained; but I do not think any equal to that I have described—viz., between the Game, the Grey Dorking, the Brahma Pootra, and the Malay.

Although for the sake of obtaining eggs at a season when they are most expensive, it is a wise plan to save each year several pullets for laying, still the eggs to be placed under the sitting hen should be those laid by two-year-old birds, as they will be found not only more certain to contain a chicken, but the chicken will be stronger than any produced from the egg of a pullet. The number of eggs to be set under a hen varies according to the size of the bird and the season of the year. My impression is that too many are generally set, and that the consequence becomes manifest in the weakness of the chickens. In no case should there be more than thirteen eggs, however large the bird, and in most cases ten or eleven are quite sufficient; indeed, in very cold weather, nine eggs are enough for the largest bird to cover. The good effect of setting comparatively few eggs is observed in the strength exhibited by the chickens in escaping from the shell, and the fact that they are all hatched at the same time.

Having shown what description of cross-bred fowl is the best for the farmyard, the next point will be to consider in what manner such birds may be kept in the best health. The only time at which a fowl having the general run of the farmyard really requires any extra assistance is during the time of moulting. That operation is to the fowl a great effort of nature, which doubtless, when in reasonable health, it can manage to get through without artificial assistance; but if, by giving a little advantage in the shape of food, at but slight expense, the bird can get through its difficulties in half the time it would otherwise do, I think every one will admit that a little attention to this point will give a good return for the trouble. At this season, therefore, I strongly recommend that all fatty substances left after the farmhouse dinner, such as the crust of meat pies, pieces of pudding saturated with gravy, and all scraps of meat, shall be carefully collected, cut up, and well-mixed together with black pepper, and given to the fowls. The effect of this treatment is most astonishing. It just gives to their nature the required impetus, and enables each bird to complete its moulting, as before stated, in about half the time it would otherwise have taken, and it is ready once more, with renewed vigour, to repay its possessor cent. per cent, upon his slight outlay of trouble, I will not say expense, for the amount really expended will have been so trifling that it can scarcely be calculated.

Between the months of November and March the farmer has great opportunities of doing well to his fowls, and again at very little cost; for there are generally operations going on in his house which enable him to give them a considerable quantity of extra food. I allude to the killing of the fat pigs, which takes place periodically at this season, and every bit of refuse meat should be carefully saved, boiled, and cut up. The broth or liquor consequent upon the boiling should be mixed with common meal, and the whole made into one compound, and

given to the fowls once a-day. Black, or even in very cold weather, a small quantity of cayenne pepper may be added to this with good effect.

I am not by any means an advocate for coddling fowls in warm hen houses, because I believe the injury done to them by a sudden change of temperature is much greater than any advantages which may accrue from their being in a heated atmosphere during the night. The hen that comes from a cold night's lodging feels no great difficulty in getting up (or rather down), and going out early in the morning to "pick up the early worm;" but the hen from the warm and enervating roost fears to brave the inclemency of the weather, picks up what little corn may be thrown to her near the door of her hot-house, and retires with dainty steps as soon as possible, preferring rather to dose out her existence on her comfortable perch than to live a life of activity and search after food. At the same time, a slight, but very slight, artificial heat is of advantage during the winter months, though not by any means imperative. Therefore, if with perfect convenience one wall of the hen house can be attached to any building in which a daily fire is kept—for instance, a harness room, a boiling house, or a blacksmith's shop—and a flue can, with little expense, be run up between the two buildings, the fowls will derive good from it.

It is very important to arrange the breeding of fowls in such a manner as to have both eggs and chickens ready for market at the time when they are most in request and command the highest prices. There is no art in getting fowls to lay well, and to sit and bring up their chickens in the spring months; but the great point is to have eggs during the moulting season, and thence to the end of January, and also to have what are termed spring chickens ready for market in the first three months in the year. To obtain these, hens should be put to sit late in October in some cow house or outbuilding opening into a small foldyard, so that the chickens, when hatched, can be turned out for two or three hours in the middle of the day; and after the first month they will require very little care, and will be sold at a remunerative price. In order to ensure a supply of eggs when they are most valuable, the hens should sit at the end of January or beginning of February. The cockerels from these hatchings should be sold in May, when there is no Game, and the pullets will begin to lay early in autumn, and will continue to do so during the winter months.

Mr. Bainbridge said that last summer a friend of his had obtained some hens from the Cape of Good Hope, and they were placed amongst some Dorkings. These hens, after a time, began to hang their heads, and appeared likely to die. Some garlic and hot bran were given to them, and a little pepper was added as a stimulant, and the result was that the fowls came round again. Fowls were carnivorous as well as grain-eating, and some tallow cake with cayenne pepper might be given to them with advantage. Pepper was a powerful stimulant, and aided the health of the birds, and aided their digestion. By the use of animal food and pepper, fewer fowls would be lost than was the case at present.

Mr. Scott considered that Game fowls of pure breed were the best, and they were much superior for the table. They were hardy birds, and required less attention than other breeds. He recommended the giving of animal food to fowls, and showed that there were many things in connection with housekeeping which might be given to fowls, instead of being wasted. The French people gave their fowls more animal food than English farmers did, and the production of eggs was more abundant than in this country. Mr. Gaunt had not touched upon Geese and Turkeys in his lecture, and in his opinion the breeding of these was unprofitable to the farmer. Female spring chickens were profitable, as they supplied eggs in the winter season.—(*Mark Lane Express.*)

THE AMALGAMATION OF THE PHILOPERISTERON AND NATIONAL COLUMBARIAN SOCIETIES.

I was very pleased to read in your valuable paper of the 12th inst. the Committee's report of the amalgamation of the Philoperisteron and National Columbarian Societies. Would it not be a great boon to fanciers, if the new Society would have their proceedings, and all papers read at their meetings, reported, in a similar manner to the Royal Horticultural Society's reports, in your widely-circulated paper; also, a description of all birds shown at such meetings? I think it would be the means of raising the Pigeon fancy in the eyes of the public,

and at the same time act as a stimulus to fanciers in breeding, and possibly cause some to join other columbarian societies.

First, The report states a part of the Society's business shall be to form authoritative standards for most varieties of Pigeons. I am very thankful to see this subject under consideration, and by asking every other columbarian society to forward papers containing what are considered the proper points of the birds its members breed, then we should obtain a standard of excellence for every variety of Pigeons, which would be invaluable to a young beginner, many varieties not having their points stated in any of our leading works.

Second, As regards the classification of prize lists, and the judging of birds, both subjects are being sadly neglected by the committees of poultry and Pigeon shows, simply because you can seldom find a Pigeon-fancier on their committee, and gentlemen are appointed as judges that have never been breeders or fanciers, and, therefore, not thoroughly competent to judge.

At most of our leading shows a cup or piece of plate is offered as an extra prize to the winner of the greatest number of points. In my opinion it is not a fair way of giving an extra prize, because it only brings the dealers into competition with fanciers having only a few pairs of birds, and what chance have they against the dealer who can show in every class? or else it causes two or more fanciers to unite and endeavour to obtain that which they have no chance of obtaining if they exhibit their birds separately. Such has been the case at some of our principal shows. The practice ought to be stopped. If committees intend to give an extra prize, by all means give it to the best pair of birds in the show, and then every one will have a fair chance of gaining the extra prize by honest competition.—A YOUNG FANCIER.

[Arrangements are making for carrying out some of our correspondent's suggestions.—Eps.]

DEFECTIVE-PLUMAGED POUTERS: THEIR USE, ABUSE, AND DISUSE.

I HOPE, without incurring a further accusation of undue haste, I may be permitted at once to compliment my friends, Messrs. Ure and Stuart, on the five weeks' deliberation they have bestowed upon my late article, although their commendable caution has resulted in considerable misrepresentation and some misquotation of its contents.

Both of these gentlemen have mistaken the premises of my argument, and, therefore, have advanced a criticism which does not apply. They mainly assume that I have advocated the entire disuse of defective-plumaged crosses, whereas I have simply regretted their abuse, and have pleaded their more temperate employment for strictly present purposes, nor have I hesitated to suggest a suspension of their use "for a time," and for reasons fully stated. By implication it is clear that I have not recommended fanciers to "dispense with" or "throw aside" these crosses altogether, and therefore I beg to doubt the "carefulness" with which my article has been read.

So far, indeed, from shaking my views, your correspondents supply me with many welcome corroborations, and I repeat that "the question for the breeders of to-day is not so much what may be done in crossing, but what really should be done under the present aspect and conditions of Pouters as a class."

Let me, before analysing the remarks of your correspondents, briefly re-state the facts of the case, and the deductions made from those facts. My article, then, was founded upon my observation of the last two annual shows at Glasgow. The birds exhibited on these occasions showed great progress in size, symmetry, and length of feather, and in all such matters did infinite credit to the judgment, taste, and perseverance of the Scotch breeders; but in the departments of colour, markings, and proportionate limb, there was much, very much, of undevelopment, if not of deterioration, to criticise and deplore.

These results I attributed to one-sided breeding, to a too-partial "selection" for size and form, by the too-frequent matching to birds of defective plumage, such matching clearly implying an indifference to, or neglect of, colour and markings.

As a remedy, and as a means of future progress, it was suggested to import "into the department of colour those processes of selection which had proved so effectual in the domains of size, contour, and vigour," to discard "for a time" rigorously any elements of dilution or infusion calculated to imperish the hue, and to cross instead with the "soundest colour obtainable."

I further pointed out that this could be done "without impairing the Pouter in size or symmetry; for in every colour there are many families of grand birds sufficiently unrelated to supply crosses for some time to come," and it was urged upon the sound fancier as the real triumph of his art to superadd to the advantage already acquired, and which existed in profusion, those properties hitherto neglected and deficient.

In these common-sense suggestions, as "an old fancier," one of your correspondents cannot agree, while in the opinion of the other, my "theory" (as he is pleased to term it), should not be adopted, helping, as it does, to place the "young fancier" in an "awkward position."

It is encouraging, however, to find that the facts of the Glasgow shows are not really denied, and I thank Mr. Ure for his timely advocacy of reform in the markings; and although he does not go so far as myself in regard to the deterioration of colour, there is, in his remarks, a tacit admission that colour at any rate is at a standstill.

While, however, my friends cannot accept the principle of "careful selection," as a remedy for the evils indicated, it is astonishing to notice the number of illustrations they supply in its favour. Surely, if there is one principle which more than another is cardinal, and universally admitted amongst fanciers, it is that of "selection," no matter what the property in question. Hence such phrases as "breeding true," "breeding for feather," "breeding for limb," "breeding for wattle," "breeding for head and beak," &c. And so firmly rooted is this principle, that no fancier of any experience hesitates to account for the appearance of any unexpected excellence or defect, but invariably attributes it to some ascertained or probable reversion to a previous cross; and, if in Pouters the instances of reversion are more than usually numerous in the department of colour and markings, it is owing, without a question, to that partial and one-sided selection which has had for its principal object size and contour.

I am reminded by Mr. Ure, "that many of the finest birds that have been bred in Scotland have been from Mealy, Chequer, or Sandy birds matched with birds of the standard colours. Now, where has this been denied? Surely my article was based on this very fact, together with the additional fact that the successes attending this method of "selection" for size and form, have like most successes been abused, and that so lavishly as to lead to baneful results in the department of "colour" (which is the actual question raised in this discussion, and not merely the mating of Mealties and Yellows, as your correspondent will find, when he refers to page 62 of this Journal, for January 10th).

It is also asserted by Mr. Ure, that the present grand properties of contour, size, vigour, &c., have all been developed from birds "little better than Pouting Horsemen." How has this been managed, except by "careful selection?" Again, "Yellows, for instance, bred together, soon become pale and faded-looking; but a well-selected Red improves the colour at once." What is this but careful "selection?" and if Yellows can be thus intensified and preserved from dilution, why not the other colours?

Once again. The improvement of the markings will be "easily managed," but to lengthen the limb will require both "time and skill." But by what method, if not by "selection?"

Mr. Stuart follows Mr. Ure, and further corroborates me by saying that "any good fancier who has tried the experiment of crossing a Blue Pouter and a Red, or a Mealy and a Yellow, will not repeat it in a hurry." This is a negative process of selection. And again he says, "The best method is to select two birds that with both their points combined come nearest to perfection. When we do this we do all that we are able, and it is not absurd to expect a happy result." With a belief so confiding in the virtues of selection, will it be too absurd to hope that at least some of the grand birds of Scotland may be "combined" for happier "results" in colour and markings?

Mr. Stuart is not, however, without a rival remedy to inculcate (which, perhaps, will help the "young fancier" out of the "awkward position" in which I have so unwittingly placed him), he "destroys" his mismarked birds in the nest. But what is this even but "selection?" for, clearly, if all the bad birds are selected for destruction, none but good ones will remain to perpetuate the strains; thus the reversion to bad markings will be controlled, if not ultimately prevented. This method (pardon the irreverence), might be termed "Pigeon-pie selection," suggested, as it is, by so distinguished a conservator of well-pied Pigeons.

The illustration drawn from Almond Tumblers is particu-

larly unfortunate for Mr. Ure, and affords but another corroboration of my views. Whatever use Almond-fanciers may be making of Kites, Duns, and Grizzles, it is more than certain that Almonds just now are at a standstill in regard to feather, if not actually declining; while the notoriously favourite properties of head, eye, and beak alone progress. The defects so noticeable in the Pouter are no less observable in the Almond Tumbler, and arise from similar causes—viz., one-sided selection at the will or taste of the fancier.

It will be seen, then, that my late article advances neither theory nor novelty, but merely claims a more rigid and more effective application of a principle which is the very creed of fanciers.

Whether your correspondents disagree or not with my remarks is of small moment, while they supply such excellent illustration in my favour. When we are asked to believe that Pouting Horsemen were the progenitors of our present grand race of Pouters, we can only do so by giving credit for a most persevering amount of selection for symmetry and size. We are not asked, however, to endorse a similar or proportionate development in colour, for even if we admit that "Blacks, Blues, and Yellows are all as good as they have ever been," the admission by no means involves either progression or present excellence, while it leads us not unreasonably to inquire why colour, like size and form, is not better than it has ever been, especially as its improvability and amenability to control is undisputed. In the main, colour is bad now whatever it may have been before, and its improvement by any possible means should be the aim of every artistic fancier.

But what better principle, or what better application of it do these gentlemen advance? In the lamented absence of a "printed guide," the "young fancier" is told by your correspondents to use Meales, Chequers, and Grizzles in their "proper places," to use "the right sort of Splash," to "properly match" their birds, as "it all depends upon this." What is this but selection? and supposing the "young fancier" aspires to sound colour, as well as other properties, how is he to discover the "proper places," and the "right sort" on which it "all depends." He will find but little to help him in your correspondent's remarks—little, indeed, which will relieve him from his "awkward position." To some extent he has been told what may be done, but what really should be done is, for all your correspondents have affirmed, as much in the dark as ever. To be told "that the Chequer bred from Blacks should be crossed with Blacks only" is very good advice indeed so far as the Chequer is concerned, and simply amounts to improving Chequers by careful selection, and the importation of sounder colour. But before it is put forward as advice to be followed for producing "Blacks of raven brilliancy," it may be well to consider the kind of colour from which the Chequer has been bred, the kind of Black to which it is to be mated, and how much Chequer or other diluting blood the said birds already contain. These and kindred questions are surely not immaterial if improvement of colour is really in question, and call loudly for answer before further dilution is advocated, for our present Blacks are very impoverished in tone, and so far from pretending to raven brilliancy are too frequently of a bluish, ashy, slatey, and almost dappled appearance. The question at issue is not the improvement of our Chequers or Meales, but the establishment of sound standard colour.

While scorning theory, it would scarcely seem consistent to withhold practice, and so Mr. Stuart goes a step farther, and gives us the actual method employed by the experienced breeders of Scotland, who, he says, "to the best of their judgment select such birds as they think suitable for producing the most perfect colours, at the same time keeping in view size and form." Perfect colour is therefore the primary consideration, while size and form are secondary. But, what of the results, and of the evidence of his brother fanciers? For notwithstanding that colour is very unsatisfactory; that the successes have all been in the departments of size and form; that Mr. Ure claims no development of colour; that Mr. Huie, writing on the colour question, says, on January 30th, "These facts show how colours have been mixed, but we have been working for size and shape; these being attained, we shall by-and-by arrive at the desired colour"—notwithstanding this, and much more to the same effect, we are now to understand that "the most perfect colour" is the antecedent feature of Scotch selection; while size and form are treated as subsidiary—simply "kept in view."

At last, then, the young fancier is extricated from all his

difficulties. Henceforth to produce great results in size and shape, he will match for "perfect colour," and if he is venturesome he will to obtain perfect colour match for size and shape. Simple-minded fanciers, who have been in the habit of connecting cause and effect may be somewhat staggered at this revelation, but what of that? "Practical experience is safer than theory." At least, so Mr. Stuart finds it.

Good a judge as my friend, Mr. Stuart, undoubtedly is of a Pouter, and thoroughly acquainted as he may be with Scotch fanciers, I hesitate to accept this version of their method. Either he has inverted his meaning, or a failure most signal must be confessed, for despite of all this judgment and selection for colour, it is only form that progresses.

It is pleasing to find, however, that my article has not been wholly misunderstood, and that an acceptance and confirmation of its views may be found in a late number by that earnest and successful fancier, Mr. Boyd, of Edinburgh, who is of opinion that my suggestions fully meet the case. Although I have much more to say, I must not occupy more of your space this week, but in an early article I propose further to examine the statements of my friends, and to push on a stage the subject of defective-plumaged Pouters, for the whole question of improved colour and markings hinges on the use, abuse, or disuse of such birds.—W. VOLCKMAN, *London*.

NEW BOOK.

Fowls: A Plain and Familiar Treatise on Breeding, Exhibiting &c. By JOHN BAILY. Seventh edition.

THAT this little volume has reached a seventh edition of part, and a fifth edition of the other part, is a sufficient evidence of what the public think of it. We can testify to the truth of this sentence in the preface—"it is all practical."

LIZARD CANARIES.

I WILL endeavour to answer Mr. Hawman's questions, and I hope satisfactorily.

No. 1. A high colour is not quite so much an object in a Lizard as in a Norwich Canary, but certainly to be desired; and in a Silver class a bird whose ground colour is a good mealy ought always to beat a bird whose ground colour is buff, supposing they are equal in other respects.

No. 2. Certainly not. It ought never to be shown anywhere, or, if shown, ought to be disqualified.

No. 3. Silver-spangled class.

No. 4. A decided fault. A good Lizard ought to have the following properties:—Large oval cap, square at the back. Beak, legs, and feet very dark. Head flat, large, and wide. Neck and back well and evenly spangled. Tail and wings black. The cap is the most important part in a Lizard; and one with a broken cap ought in my opinion to be at once disqualified by the Judges, no matter how good he may be everywhere else.—HOWARTH ASHTON, *Polefield Hall, Lancashire*.

LIFE OF A TAME HAWK.

PETLAND has many inhabitants. They vary in appearance. Some have four feet, others two; some are clad with hair, others with fur, others, again, with feathers; but as a rule they must be *petites* to be fit to be pets, the latter word coming from the former, and I should scarcely think a whale, or an elephant, or a giantess was ever made a pet.

There is another rule, another pet-canon—a pet must be domestic, must be tame, in order to give much pleasure. A wild bird may be admired, but its wildness prevents its being petted. Thus the kind clever dog, the wise quiet cat, the saucy yet tame Bantam, the Pigeon that feeds from your hand (especially the Pouter, playing and blowing to his master's "hua, hua"), the Bullfinch that kisses his fair mistress—all these, and such as these, make superlatively excellent pets, because of their exceeding tameness.

The tamer a pet is the more pleasure it gives, and, another great point, the happier it is in itself; and who is there that can take delight in that which is unhappy? However, there are some birds classed as wild which may be tamed so far as to become very interesting pets, and their life may be made very tolerably happy. I have written this because I have been a daily witness for many months of the semi-captive, interesting, and I think happy life of a Windhover or Kestrel Hawk.

One fine day last June, on returning home from a few days' absence, I was led, or rather dragged, by a group of enthusiastic children to see a new pet—such a favourite. But what was it? Of course I was not told at once, but made to guess and guess again, until the children's patience was sooner exhausted than mine, and each tried to get out the word "Hawk" first, for a Hawk it was; and I am afraid I shook my head, fearing scratches, bloody hands, or worse damage to the young ones. Led on further, I saw in the dim recess of a rabbit hutch, the new pet, "Jack" by name, for he was already named. Master Jack was a very yellow gentleman, with a kind of old-Indian bilious look, having tags of yellow down hanging to his feathers, and an ever-snapping beak which boded mischief, but happily was as yet soft and incapable, though desirous. He could not feed himself, but opened his mouth readily when hungry, eating heartily of small pieces of bird, mouse, or uncooked meat. Neither did he object to a drop of water from a tea-spoon; but this he did not receive cleverly, a little child remarking, "Jack is naughty, he spills his tea!" Whether Jack ever thought of his nest in the high tree, or of father and mother, or brothers and sisters, those other "yellow boys," I know not; but I incline to think he did not, for he showed no signs of pining. Ties of relative or friend hung loosely upon him, and he cared not for "the old folks at home." Perhaps he was a philosopher, if so a stoic; perhaps not. However, he fed his fill each day, and what cared he?

Presently Jack was remarked as being of an inquisitive turn of mind. His hutch commanded a view of the back door, and no one could come in or go out but he observed them, and would watch them out of sight with an odd sideways movement of his head and neck.

Jack progressed famously. On showing him a dead bird out came his talon, and he grasped it and stood on his prey triumphing; but for a long time he could not tear a bird to pieces; when he could he always began at the head. Jack now showed a wish to perch, and his wish was gratified. A perch such as Macaws are seen upon was made him, and he took to it at once, and seemed highly pleased to be no longer in a cage, but to enjoy the whole prospect, for his inquisitive eyes looked every way. A ring moved up and down the upright pole, to which was attached a chain, the other end being fastened to his foot.

But, alas! the course of pet life, like that of true love, never runs smooth. Perhaps Jack "came out" too soon, and like many an unfeathered biped, was all the worse for it, for a precocious career is beset with perils. Coming from church one Sunday morning, poor Jack was seen lying helpless on the ground, and on examination he was found to have greatly injured but not quite broken his leg. Great was the sorrow of all, and the desire to relieve the poor bird of his pain. The limb was bound up carefully, and Jack placed very tenderly in a hamper nearly full of soft hay, and the hamper put in a dark place, so that the poor pet should have no temptation to move or struggle. Three weary weeks did Jack pass thus in the dark. I hope he slept his time away. But oh! the benefit of trouble. After this calamity Jack was no longer wild. He had learned to love the one who brought him his food, and who had cheered his solitude; he would now allow his breast to be stroked, and would even permit a kiss. Once again mounted on his perch in the sunshine, care was taken, by swivels put in here and there in his chain, that he should not in future get entangled and come to grief.

The weeks now passed on smoothly enough. By day Jack enjoyed the open air, the nights he passed in the stable. Very tame became the bird; very kind, though sharp, was at times the expression of his bright black-beaded eyes. Now he would fly on the arm of a child, and ascend to the shoulder or the head. He liked his prey to be given him alive, and, seizing, killed it in a moment. He would even eat meat cooked, or pick a bone; but to keep him in perfect health he needed mouse, or rat, or bird occasionally, for from these only he could cast up pellets, as is the case with birds of his "order." Once by chance he was placed near the Pigeon pan, and instantly took a bath, which is allowed at intervals, for by his own will he would be always in the water, and in winter he has to be kept from it. The fact that the Hawk is excessively fond of bathing in and drinking water is not generally known, hence some Hawks suffer in confinement from thirst.

The extreme tameness of this Hawk was seen in his allowing the hens to feed close by him, or even a Pigeon to pick little fatty bits off a bone of his; yet the old nature was seen in his carefully hiding portions of his food under the circular

board on which his perch stands, in order to eat them another time.

Jack showed an unmistakable love of company. Thus, when in bad weather he was removed to the stable, he would get as near as he could to the dog there chained, who on his part seemed in no way to disapprove of his nearness. Placed one day very close to the dog, he was found sitting on the straw by his side. No harm arising, he was allowed to be near always. Coming into the stable suddenly, I found Jack perched upon the outstretched foreleg of the dog. It was a pretty sight, and worthy the pencil of Harrison Weir. Another time we found Jack actually perched upon the dog's back. Who shall say that this Hawk was not an interesting pet?

One day Jack managed to break his chain, and away he went into the park near, and was soon seen overhead, soaring with the wild Hawks, possibly his near relations. I counted five, he being one. Of course we concluded that our pet would never return, but waxing hungry, he did, and was readily captured. Again he escaped, and again returned. Then it struck us as his plumage was so much improved by flight, and his own happiness increased, while his tameness was in no way diminished, that Jack might every now and then have his full liberty. So we agreed to let him have "his Sunday out," that being a day on which he would be less likely to be shot. So on each Sunday Jack takes his flight, returning on Monday morning, being "an-hungered." Sometimes my son is shooting rabbits a mile from this house on a Monday, and Jack spies him, and suddenly pounces down, and is on his shoulder. To one master he chiefly devotes himself—the one who fed him in his illness; to him he will come when whistled for.

It is singular to see this wild bird settling on the chimnies or roof with my Pigeons. Odd, too, is it that when he comes home on Monday, if we have not chanced to see him return, he is at night found roosting with the fowls. To show how quick he is of eye and wing, I may mention that when on the wing, if he is shown a morsel of meat, and it is thrown towards the fowls, yet he always secures it. Jack, in a sort of dumb show, replies to his name by a peculiar jerk of his head and twinkle of his eye. Oh, that "Hawk's eye!" "Eyed like a Hawk" is no common compliment, for truly a Hawk's eye is most brilliant and beautiful.

I need hardly say that Jack has won his way into the affections of us all; and who can wonder at it? Although I find I have spoken of him in several parts of this paper in the past tense, yet I am happy to say Jack still lives, and is as tame, lively, and happy as ever.—WILTSHIRE RECTOR.

LIGURIAN QUEEN'S WINGS TORN.

LAST Saturday I was looking over the combs in my Ligurian frame hive, and when I came to the queen, I noticed that her wings were very ragged, one of them in fact was half torn away, and I am quite certain that she cannot fly. She is a queen which I imported myself from Germany last autumn, and I think the journey here has, perhaps, caused her wings to be so much torn. Do you not think, therefore, that it would be better to put the queen with comb into the box you mention, or at once into the unicomb hive, and let the bees in the old hive raise another? I think this plan would, perhaps be better, as it is said that the old queen always leads the first swarm. When I looked at the hive it was very strong, five of the combs are full on both sides, and nearly up to the edges with brood and eggs, but there are no drone eggs yet.—ALFRED FINDESEN.

[Ligurian queens which have been placed at the head of colonies of black bees, are very liable to have their wings so mutilated by their new subjects as to be thereby for ever incapacitated from safely leading off a natural swarm. We say safely, because however defective the power of flight in a wing-disabled queen, she will frequently make the attempt without hesitation, and in this case must fall to the ground and perish unless discovered by the bee-keeper, and restored to her sorrowing children. We have ourselves lost more than one valuable queen in this way, and consider the liability a very serious drawback to the efficiency of the mode of naturalising the Italian race of bees in this country by the substitution of queens. We should in your case certainly make an artificial swarm, but we should as certainly delay the operation until drone brood was sufficiently advanced to insure the early fecundation of the young queens. You may yourself accelerate this desirable consummation by placing an empty drone comb or two in the hive next to those which now contain brood, ad-

ministering also three or four ounces of liquid food per diem regularly for the next few weeks. With a stock so exceptionally strong as yours is described to be, we should have every hope of breeding drones sufficiently in advance of our neighbours' black colonies to insure a true impregnation of the young queens. The best mode of making an artificial swarm under such circumstances, is described in page 80 of "The Gardener's Almanack," but do not neglect the caution given by us in reply to an inquiry in page 216. When royal cells are formed and sealed over in the old stock, you may readily and advantageously stock the box for your unicombe in the manner described by us in page 232.]

EARLY APPEARANCE OF DRONES.

A person to whom I sold some bees a short time ago, has this morning brought me a young drone which he found crawling on the alighting board. Now I find from memoranda kept the last five years, that they never appeared earlier than May 5th. Do you suppose this stock is likely to swarm unusually early from this circumstance, or why should the queen be laying drone eggs before the hive is filled with workers.

The fallows in this neighbourhood are now yielding abundance of farina, and are fully a month earlier than I have ever noticed them before. Let us hope for a good bee year.—T. W.

[Nothing whatever can be inferred from the exceptional appearance of a young drone expelled by the workers. Whilst examining the interior of our own hives, we have already seen several instances in which the projecting cover of an isolated cell has proclaimed its tenant to be of the male sex. Queen bees, like other mortals, are not infallible, and the best of them will occasionally deposit a drone egg in a worker cell, as if by mistake; it is probable, therefore, that your drone owed his birth to an error of this kind. The season is unquestionably early, and we trust it may turn out a prosperous one.]

SILKWORM-REARING IN ENGLAND.—No. 7.

HAVING described the castle and the mode of arranging the materials in it for the worms to spin amongst, I will name a few articles which are found more or less useful in Silkworm-rearing.

The Hatching Box is intended to contain the Silkworms' eggs to be hatched. It can be made of card or wood, and should have a level bottom; its sides may be half an inch in height, and it may be 4 or 5 inches across each way for an ounce weight of eggs; but cannot well be made larger than to contain 3 ozs. of eggs. For every 3 ozs. there must be a separate box.

This box must have a kind of lid fitting exactly, like the lid of a saucepan, by entering in over the eggs. In making it, take pieces of wood a quarter of an inch square and form a frame. This can be covered with canvas, net, or other material having holes about the size of a mustard seed, and which is to be glued to the frame, and tacked if found necessary, for it must be tightly extended as for a sieve. This frame or lid is to be let into the box over the eggs, but not so as to touch or press on them; and to prevent this, four pieces of cork or wood should be placed in the corners of the box among the eggs, just one-sixteenth of an inch above their level; on these the lid will rest. The eggs in the box should not be more than one-eighth of an inch deep. The lid must have small handles or pegs by which to lift it. The little worms on issuing from the eggs make for the holes or canvas, pass on to the mulberry leaves placed above, and along with these may be lifted off and placed on sheets of paper.

The above kind of hatching box is used by many large Silkworm-rearers, but I find the following mode of construction is an improvement. Take an even piece of cardboard, or wood, 6 inches or a foot square; lay the eggs upon it to the depth of about one-eighth of an inch, and glue an edging or list of wood round it so as to come just above the level of the eggs, a hair's breadth will do. This edging will keep the eggs in their place. The frame or lid can be made rather larger, and only the canvas part will be laid over the eggs, but supported from touching them by the wood. It will be readily seen that in this way the worms will be in no way incommoded as by the wooden frame inside the box.

I have adopted a more simple method than either of the above with success, when the quantity of eggs is small, by doubling a sheet of rather stiff paper so as to form channels

or gutters thus —AAAA—. The gutters are made about an inch in height, and are kept open at top to the extent of from half an inch to an inch, by gluing down the two sides to cardboard. The eggs are placed in these gutters, the leaves are laid on the ridges, and the worms on hatching easily travel up the sides to the leaves, which can be readily lifted away without any eggs adhering to them, as would be the case if the leaves were laid directly on the eggs, by reason of the fine web silk issuing from the worms' mouths becoming entangled among the shells. Perhaps this plan would be somewhat tedious for large quantities of eggs, but I believe it to possess some advantages. The warm air of the hatching room can circulate under the gutters, and its doing so is certainly beneficial to the eggs; besides, the eggs, instead of being heaped together, lie farther apart, and thus the worms have more room to travel about, which I consider very important. If the leaves from being very small fall into the gutters, this may be prevented by laying over the ridges fine netting, by which worms and leaves may be lifted away.

The Thermometer is necessary in Silkworm-rearing, to indicate the heat of the room in which the worms are. Some persons also use a thermometer out of doors to serve as a guide in the admission of the external air to the room.

The Hygrometer is recommended by several first-rate Silkworm-rearers to point out the degree of humidity in the rearing room. It is not so absolutely necessary as the thermometer. Damp should be wholly avoided. Salt will be a good substitute for this instrument, for if placed on a saucer in the room it continues dry if the room is not damp, otherwise it becomes damp. A damp room is an improper place in which to keep Silkworms. Stagnant dampness is that which is so hurtful, and not the natural moisture of the atmosphere from rain, because the insect lives in the open air, exposed to it as well as to sun and wind.

The Microscope at the present day has become an essential instrument, not only in examining the Silkworm, but even the eggs, to discover if they be free from disease. The instrument should magnify at least three hundred times.

Sheets of paper or calico are necessary for covering the stages on which to keep the worms. When paper is used it should be tolerably stout and without gum, in order that it may dry quickly. The sheets for the stages I have described should be 2 feet by 18 inches, two covering each compartment, or sixteen to each stage. A paper without colouring matter is to be preferred; common brown paper will answer the purpose. I prefer calico if not too dear, for it will last several years and can be washed, which paper cannot be; indeed it can seldom be used again the second year. The commonest grey calico will serve every purpose, and it may be cut if desired to the full size of each compartment of the stage. The calico must be laid in water in order to shrink it before cutting, otherwise it will shrink on being washed, and become too small to cover the compartment.

Wooden or Tin Trays.—These are for transporting the sheets of paper or calico on which are the worms from one stage or place to another, when their removal is necessary for the purpose of cleaning, and to give more room. These trays may be formed of light thin boarding, well planed and even polished, that the sheets may the better be drawn off into their fresh position. Tin would answer the purpose very well, or even stiff cardboard, but I consider wood best. The trays should be made rather less in width than the compartments of the stages, because when these are arranged with the materials for the worms to spin in, the trays will have to pass between them without disturbing such materials. The most convenient size seems to be 15 inches wide, and 4 feet long. Their being less in width than the sheets of paper is of no consequence, because the worms are only to be placed so as to occupy about half the area of the stages, and as the worms grow larger the other half of them fill their new quarters. The only time the worms would have to be laid more thickly would be when full grown, at the time of moving them into their spinning retreats. The width of 4 feet admits of two sheets of paper being carried at once, besides the convenience of lodging the trays across the side rails of the stage while gathering up the worms.

Nets and Perforated Sheets of Paper.—Nets are used by many Silkworm-rearers to facilitate the work of cleaning when the worms are growing large, or after their third change of skin. The net is laid over the worms, and leaves are distributed over it. The worms pass through the meshes to the leaves, and can then be lifted up by the net, which can be secured to the bottom of the stage above by hooks during the time the dirt

and refuse leaves are being cleared from the stage beneath, after which net and worms are again let down upon it. These nets are to be made of the same size as each compartment of the stage, or eight in number. Larger would not be convenient, as they would belly too much in the centre with the weight of the worms. The meshes of the nets should be from half an inch to three-quarters of an inch square. It will be necessary to have as many nets as will cover all the stages, as they have to remain under the worms. Many persons use paper, perforated with holes the size of marbles; but I do not find it in any way preferable to nets; on the contrary, it presses too much on the worms, and all do not find their way through; besides, paper is not so durable.

Ladders or Steps.—These are to assist in reaching the higher stages of a castle. Folding steps, 5 feet high, running upon casters, would be more suitable than common ladders, as it would not be necessary to lean them against the castle. Each castle requires two, or one on each side.

Leaf-cutting Machine.—This is a box with a knife in the fashion of a chaff-cutter, and is used by large Silkworm-rearers who have many leaves to cut for the worms. A good clean sharp knife answers the purpose well on a small scale. The leaves should not be cut until wanted, as they must be given to the worms immediately, or the edges where cut soon dry, and they would then not be so acceptable.

Baskets will be necessary, or large open hampers to put the leaves in on being gathered. Some persons use sacks, and these will answer the purpose if they be emptied before the leaves have time to heat, which might be detrimental to the worms. They should not be placed on the ground, as there is then a danger of ants, earwigs, and other insects, finding their way among the leaves. On the Continent large sheets are also used for this purpose, the leaf-gatherers descending from the high trees with large apronsful of leaves, which are emptied on the sheets, carried home in a cart, on the backs of donkeys or mules, or on men's heads.

Wooden Stands are employed to support small sheets of linen or calico, on which the female Silkworm moths are placed to deposit their eggs. They are made about 1 yard square. The most simple mode of construction would be to form a frame with inch splines, nailing half-inch ones across at every 6 inches, to give more firmness, and to secure the linen more evenly. At the back of this two inch splines 2½ feet long are fixed on hinges to the top part of each side, to serve as supports, which on being opened cause the frame to take a slanting position; this is better than a perpendicular one for the moths. At the bottom of the frame in front there should be formed a sort of gutter to hold any eggs that may fall from not adhering to the linen. This can be formed by pieces of rather stout wire 4 or 5 inches long knocked into the spline at the bottom of the frame, and then bent circularly upwards in gutter form, in which the linen will lie. The linen must be evenly suspended and tacked round the sides of the frame, and can then be placed for use on a table or a Silkworm stage. This size of frame and sheet will contain easily the eggs from a thousand or more moths. It is necessary to have at least two of these stands; one for the moths to pair upon, and the other for the females alone to lay their eggs on without disturbance.

Bone or Wooden Knives are recommended by some authors for scraping the eggs from the linen before being hatched. This cannot, however, be done until linen and eggs are soaked in soft water to soften the gum by which the latter adhere. I have found that a common tablespoon answers the purpose.

Little *brushes*, or a kind of whisks, are requisite for brushing the stages clean, as well as close baskets for carrying away dirt, &c. Traps will be necessary to catch mice and rats, if any, for they are sure to eat the worms; but to prevent their mounting the posts of the castle, the bottom of these could be encircled by tin soldered round, up which they could not mount. A dredger or sieve with holes a quarter of an inch in diameter is used by some Silkworm-rearers to sift the cut leaves over the worms, and although I never have adopted the system, I consider it good, for I believe the less the leaves are touched by the hands before being given to the worms the better; besides, they can, doubtless, be distributed more equally than by hand.—LEONARD HERMAN, JUN.

perly, but were left to do as they liked during the winter. They have been fed on peas, with the addition of a little barley occasionally. Wheat is very good for them when rearing young.—L. B.

OUR LETTER BOX.

SALT FOR FOWLS (Tyro).—We do not think it necessary to give salt to fowls.

HEN LAYING SMALL YOLKLESS EGGS (Inquirer).—If you had not killed the fowl she would have become that which is called a hen-cock. She would never have produced natural eggs, and would have been that abomination in a yard, a crowing hen. All hen-cocks in fowls, and the mis-called mules in Pheasants, are found in the same state when dissected. The whole of the inside is covered with yolk of egg which escapes from a fissure or other injury.

BREEDING DARK BRAHMA POOTRAS (Old Subscriber).—Large birds may be bred from small ones, but it is always doubtful. For breeding good birds we like good birds, and have no affection for the late-hatched dwarfs. If the cross is a good one, try it by all means. April is a good time for hatching.

HATCHING PULLETS' EGGS (E. A. S.).—Yes, the first season's eggs, but not the first eggs. The later eggs of the first clutch may be trusted in every way.

COCHIN-CHINA COCK'S HEAD SWOLLEN (C. L.).—We should purge him freely with castor oil, and rub the face with cold water and vinegar every morning. It is not roup, Cochins are not subject to it. We should, while he feeds well, give him a table-spoonful of castor oil every day.

GIVING MEAT TO COCHIN-CHINAS (Lemon Buff).—Meat is not necessary at all, but if you give it, give it cooked. Raw meat makes weight, but causes mischief in every way. It induces apoplexy in laying hens, from inordinate fat. It creates all sorts of vicious and depraved appetites, which they gratify at any cost, eating the most sensitive parts of their companions' bodies. It induces a great growth of comb, and is often fatal to the hope of success.

REMUNERATION FOR REARING CHICKENS (An Old Subscriber).—It would depend partly on the time of year. If the chickens are two months old now, they would be worth 1s. 6d. each. If to attain that age in June, 1s. each, food being found.

AGE OF PULLETS LAYING (M. A. H.).—It is partly dependant on breed; thus, Brahma Pootras and Cochins lay earlier than Dorkings. If an average were taken, it would be found they lay at about six months. New-laid eggs should make now about three-halfpence each in towns.

BLACK EAST INDIAN DUCKS (Many-years Subscriber).—These, Buenos Ayres Ducks, need no especial treatment. They are not early layers, and you need therefore be neither surprised nor disappointed. You may let the Duck have part of her eggs, but you doubtless know "it is bad to put all your eggs into one basket." We believe hens are always better mothers than Ducks for Ducks. We have always found them hardy.

POULTRY IN CONFINED SPACE (C. A. J.).—We agree with what was said by "OLD FOX."

FLEAS ON PIGEONS (A Young Fancier).—If the cote and nests are kept scrupulously clean, and limewashed with a little flowers of sulphur in the mix, there ought not to be vermin of any kind. Dust under the feathers with a powder composed of equal parts camphor and flowers of sulphur.

BOOKS (S. Taylor).—You can have Brent's, "The Canary," sent to you free by post from our office, if you enclose twenty postage stamps with your address.

BELLFINCHES—MATERIAL FOR NEST-MAKING (J. A.).—Hang in the cage a net of the same material as that which Canaries have for nesting, and also placed at the bottom of the cage plenty of dry moss and hay cut 1½ inch long.

YOUNG TURTLE DOVES EJECTED (Nutchil).—The only reason that we can assign for one of the young birds being turned out of the nest is, that the nest-pan or box is too small, or that one bird is hatched a day or two before the other, and the stronger bird turns the other out of the nest. The only remedy will be to give a larger pan or box, and to watch attentively for the cause of the young bird being turned out.

HIVE COVERS (Apis).—The milk pan, doubtless, answers very well, although we have never tried it. All our hive covers are similar to the one delineated in page 17 of the last edition of "Bee-Keeping for the Many," and which we had leaves nothing to be desired.

SQUIRRELS (L. B.).—No reply has come to your inquiry whether these animals eat the grubs in oak galls, and we have no knowledge of the fact. We think it more likely that they eat the galls, for they are not carnivorous animals.

POINTS OF HIMALAYAN RABBITS (Catherine).—Himalayans are Rabbits of colour. Their skin should be dead white, save the ears, feet, nose, and tail, these should be a very dark brown; the eyes pink. We have kept Lapwings where there were many cats. We never lost any, nor do we think they would take them.

POULTRY MARKET.—MARCH 25.

THERE is a great scarcity of good poultry, and prices have gone up. We cannot guarantee their continuance, but good qualities will sell well for some time.

	s.	d.		s.	d.		s.	d.		s.	d.
Large Fowls.....	4	6	to 5	0		Pheasants.....	0	0	to 0	0	
Smaller do.....	4	0	to 4	6		Partridges.....	0	0	to 0	0	
Chickens.....	3	0	to 3	6		Guinea Fowls.....	3	0	to 3	6	
Goslings.....	8	0	to 9	0		Hares.....	0	0	to 0	0	
Ducklings.....	6	0	to 6	6		Rabbits.....	1	4	to 1	5	
Pigeons.....	0	8	to 0	9		Wild do.....	0	8	to 0	9	

AGE AT WHICH PIGEONS LAY.—I have several hens hatched last year that have laid twice, and one three times. They have not reared all the young, as they were not paired off pro-

WEEKLY CALENDAR.

Day of Month	Day of Week	APRIL 2—8, 1868.	Average Temperature near London.			Rain in 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year	
			Day.	Night.	Mean.		m.	b.	m.	h.	m.	b.	m.	h.				
2	TH	Meeting of Royal, Linnean, and Chemical [Societies.]	55.3	36.0	45.6	21	31	a	5	35	a	6	after.	5	a	3	93	
3	F		56.8	35.7	46.2	20	32	5	37	6	57	a	1	45	3	10	3	13	94
4	S	Royal Horticultural Society, Promenade.	56.5	35.9	46.2	16	29	5	38	6	13	3	19	4	11	2	55	95
5	STU	6 SUNDAY IN LENT.	56.5	36.6	46.6	20	27	5	39	6	32	1	50	4	12	2	37	96
6	M	Meeting of Entomological Society.	57.0	36.8	46.9	14	25	5	41	6	48	5	18	5	13	2	20	97
7	TU	Royal Horticultural Society, Fruit, Floral.	57.3	36.8	47.0	19	23	5	42	6	4	7	45	5	0	2	2	98
8	W	Meet. of Royal Soc. [and General Meeting.]	56.2	35.8	46.0	21	22	5	41	6	16	8	11	6	15	1	45	99

From observations taken near London during the last forty-one years, the average day temperature of the week is 56.5°; and its night temperature 36.2°. The greatest heat was 79°, on the 7th, 1859; and the lowest cold 21°, on the 6th, 1851. The greatest fall of rain was 1.19 inch.

CALADIUM CULTURE.



OF the many stove plants now cultivated for the beauty or gracefulness of their foliage, few excel the different species and varieties of *Caladium*, and the majority of these being of tolerably easy cultivation, they are very generally grown. Although directions for their successful cultivation have appeared from time to time in the pages of *THE JOURNAL OF HORTICULTURE*, still, a few remarks suggestive of the mode of treatment required, may at the present time be acceptable to some of your readers.

Supposing that the plants have awakened from their winter's slumber refreshed and invigorated, the rhizomes or rootstocks plump and fresh, and just beginning to emit roots, then is the time to have them turned out of the pots in which they have been wintered, and either divided into small pieces with two or three crowns to each, or retained whole according to the wishes or requirements of the cultivator.

Pots from 3 to 5 inches in diameter, according to the variety or the size of the rhizome to be introduced, are large enough to use for the first potting. Crock such well, as good drainage is indispensable from the first. A compost of two parts loam, one of peat, one of leaf mould, one of decayed sheep or cow dung, with a liberal addition of silver sand, well incorporated and passed through an inch sieve, is a good soil to start *Caladiums* in.

In potting, place the rhizome low enough, so that it can be covered with half an inch of soil. Press the soil but very little; a smart tap on the bench will almost be enough.

After potting, place the pots in a gentle bottom heat, where an atmospheric temperature suitable for the majority of stove plants can be maintained. Give enough water to moisten all the soil, but not to saturate it. In a few days the roots will have reached the sides and bottoms of the pots, while the upper portion of the plants will only have appeared above the soil.

When one or two leaves appear on the plants it is a good time to shift these into larger pots, using soil of a similar nature to that previously employed, but in a rougher state. After this potting bottom heat can be well dispensed with, and the plants placed in the stove. Shading from bright sun is highly necessary.

As the plants grow, some of them can be repeatedly shifted into larger pots, with the view of forming large specimens, or several may be placed round a large pot at the second potting for the same end; but if such be intended for exhibition, the chance is that the pot may be excluded on the ground of its containing a plurality of plants. I consider pots 12 inches in diameter large enough for growing good-sized specimens; in such I have grown plants of *Caladium Chantini*, *Wightii*, and others 4 feet in diameter. I much prefer the plants, however, in pots from 6 to 9 inches across.

Few plants delight more in an abundant supply of water at the roots; and such must be unsparingly given, other-

wise all hopes will be blighted. I have sometimes found it necessary to have a saucer containing water for the pots to stand in. When the pots have become full of roots weak manure water may be applied with great benefit twice a week. An abundant supply of moisture must also be maintained in the surrounding atmosphere by wetting the paths, stages, &c., or by means of evaporating troughs or other appliances. A little soot or guano mixed with the water in the trough will help to enrich the atmosphere, and act as a stimulant to *Caladiums* and most other stove plants. Most practical men are agreed that a humid atmosphere moderately impregnated with ammoniacal gases is one of the best preventives against the appearance and increase of parasitical insects in heated structures.

If the leaves of *Caladiums* are to preserve their brightness they must not be syringed overhead; for however careful the selection of water may be, applied in this way and habitually, a sort of incrustation will eventually form over the leaf, and render it inaccessible to atmospheric influence by entirely choking up the pores.

The most inveterate insect enemy to *Caladiums* is the green fly, which can be kept under by cautious, judicious, and frequent applications of tobacco smoke, or by the administration of an infusion of quassia chips of the strength of three or four ounces to the gallon of water; the plants being dipped into the solution, or this being applied with the syringe.

The principal use to which these plants may be put, otherwise than the decoration of the stove or other heated structure, is as table plants. No plants are more prized here at table than some of the varieties when grown in pots 5 or 6 inches in diameter.

Perhaps the greatest difficulty experienced by those who grow *Caladiums* is in the keeping of the rhizomes in a fresh state during winter. Their proneness to decay is now generally acknowledged, and considerable difference of opinion prevails amongst practical men on this important point. One maintains that the soil in the pots should be kept moist, another maintains that it ought to be kept dust dry, while a third party thinks a lower temperature than that kept up in the stove will prove beneficial, by insuring a more perfect state of rest, as assuredly it will, and that more lasting than desirable. In my opinion more *Caladiums* are lost during winter from being imperfectly ripened in autumn than from all other causes, excluding, of course, a low temperature.

The gradual withdrawal of water when the earliest leaves attain a yellowish tint will help greatly to hasten the ripening process; keep the plants in the warmest part of the house, so as to compensate for declining solar heat, and, finally, when the leaves have all withered, place the pots on their sides on the floor of the house. The moisture supplied by the floor and the atmosphere will be enough to satisfy all demands till the middle of February or beginning of March.

To recapitulate—the principal points to be attended to for the successful cultivation of *Caladiums* are giving rich soil, potting loosely, giving abundance of water occasion-

very manured, shading from bright sunshine, and keeping the rhizomes in a stove temperature during winter.—J. A., *Wallhouse Gardens*.

MERITS AND DEFECTS OF CENTAUREA CANDIDISSIMA.

I can fully confirm what Mr. Record states with respect to the disease in *Centaurea candidissima* (see page 219), and, indeed, can go a step further, and say that with me the plant has shown disease when in a single row. The first symptoms of the disease appeared here in 1864, and the plants were so much affected by it in the following year that I have since grown the *Centaurea* but little. The tips of the leaves were crumpled and decayed, and this decay continued until but little of the plant was left, and it was, of course, useless for ornamental purposes. Single plants are sometimes attacked in a similar manner, but not so generally as those planted in lines or masses. This evil, coupled with the fact that the plant does not, under the best management, increase so quickly as many others, will go far to keep it from being so much used as it would be did such drawbacks not exist, for when it does well nothing can be handsomer. The gracefully recurved leaves when fully developed, and what is of more consequence than all, its paucity of flower stems, give it a decided advantage over all other plants of its class when it is well grown. I would not have said this much in favour of the *Centaurea* had *Cineraria maritima* been less apt to run to seed; but its tendency to do so, and the disfigurement its foliage receives if any attempt is made to prevent seedling, greatly detract from its beauty. For my own part I confess being unable to overcome its tendency to run to seed. The hardness of the two plants is about equal, but the *Cineraria* is much more easily propagated, or rather it affords cuttings in greater number, and these strike freely enough when allowed time.

Another great disadvantage of the *Centaurea* is its liability to die when taken up in autumn. In most cases we have lost fully three-fourths of the plants so taken up between the period of their removal from the ground and the following March, the consequence being that few cuttings were to be obtained in spring, although any that can be had then strike very freely. One or two seasons I left some old plants in the beds, but the disease in one instance, and the severity of the winter in another, were fatal to them; but I see that four plants which had formed the centres of four elevated beds, and which were left out in the autumn of last year, are as fresh as in October, and each plant will furnish a number of cuttings. This would seem to indicate the propriety of trying to grow a few plants in some sheltered dry spot, on purpose to propagate them in spring. Most likely in a dry stony soil plants would be preserved through the winter with very little protection; these I have just referred to had none. I imagine that this plant in its natural state must occupy a high and dry situation, possibly some rocky promontory or similar position, as the moist stagnant air of our forcing houses seems fatal to it in winter, and it is not improbable but more losses have been sustained in consequence of the plant being too much coddled than by a contrary course.

As to the respective merits of spring and autumn propagation, I can offer but little opinion. When cuttings can be had and put in during the spring, roots are formed more speedily than in autumn; but my experience would say, Try both plans. If cuttings can be had in September, take them off and insert them in boxes or pans in an airy place, but not in the full sun; artificial heat, I think, is not wanted at this time. One precaution in putting in the cuttings ought to be strictly attended to, and that is, to be sure not to insert the cutting so deeply as to bury the heart, otherwise the cutting perishes. I believe that more losses occur in this way than most people suppose. When the dull days of autumn fairly set in let the cuttings have all the sun and light possible; a shelf near the glass, where water but seldom reaches them, is one of the best places; but so capricious is this plant that although sometimes almost every cutting will grow, at times the failure will be almost total. In spring there is a greater certainty of cuttings becoming plants, but the number of cuttings at this time is far from plentiful, growth during the winter being slow. I am certainly disposed in future to see what can be done by letting a few plants remain out of doors all winter in some suitable spot.

Having already remarked that the *Centaurea* is not so apt to

run to flower as the *Cineraria*, it will, of course, be understood that it produces seed less plentifully, so that we cannot thus increase it to any great extent; but probably when we treat it the same as the bedding *Calceolaria*, we may have it in greater abundance. For the last three years I have thus treated *Centaurea gymnocarpa*, and with perfect success, at least so far as propagation is concerned, for the plant is a more robust grower, and furnishes cuttings in abundance, and these put into a cold pit in sandy soil by the middle of October, or earlier, make good plants by the usual planting-out time, the beginning of May. The tendency, however, of plants so raised to run to seed, and their furnishing little or no foliage, are great disadvantages; otherwise the free growth of this plant, and its graceful habit, render it superior to *C. candidissima*, although its foliage is not so white.

Cutting off the flower stems will not prevent *Centaurea gymnocarpa* running to seed, but plants from cuttings struck in spring are not so apt to do so as those from autumn-struck cuttings, and with me young plants of this *Centaurea* running to seed early in the season are quite useless, and dwindle off or die. *Cineraria maritima*, although persistently producing flower stems notwithstanding repeated cutting-off, does not die under the operation, neither does flowering occasion the death of the plant, as in the case of *Centaurea gymnocarpa*, which in this respect somewhat resembles a biennial.

Probably the most useful plant of the three is the *Cineraria maritima*, and it is also most easily multiplied. Its greatest drawback would appear to be the late period of the season at which cuttings arrive at a proper size; in all other respects this plant may be said to possess advantages which the others do not. Growers who have been more successful with *Centaurea candidissima* may think differently, and when that plant is free from disease, and can be propagated as easily in equal number, I will readily give it the palm, but hitherto in most places I am acquainted with this has not been the case. The different views taken by those who speak of its propagation are so conflicting, that it is reasonable to suppose that even the most successful growers of it have now and then their reverses and disappointments.—J. ROBSON.

NEW GLASS STRUCTURES FOR GROWING FRUIT AND FLOWERS.

The treatment (referred to in my remarks on page 238), which I conceived necessary for Peaches, Nectarines, and Apricots, rendered, as I supposed, half-hardy by impairment of constitution, was that of the valetudinarian. I screened them from cold cutting winds, at the same time giving them sufficient air at night, as well as in the day, keeping as near nature as possible. I luckily had some of these trees growing by themselves, offering fair opportunities for being experimented on. I adopted a simple but effectual mode of screening these trees, thus preventing the heat generated by the earth and sun from being rapidly carried away. This protection consisted in driving bars (grooved on the opposite sides, and previously boiled in creosote), into the earth at stated distances. Into these grooves 21-oz. sheet glass, 20 inches by 15 inches, was slipped, the screens thus formed being from 5 to 10 feet in height, of a diameter according to the size of the tree to be enclosed. A space was left for a door, and a close net was thrown over the top to keep off frost.

This plan answered so well, that in the course of ten days a most marked effect was produced on the foliage; from the exposure to light on all sides, the leaves became of a dark green, and very large, also free from anything like blotches. The fruit set thickly, and continued to grow without any drawback, until it thoroughly ripened. The Jefferson Plums, three dozen on one tree, and four dozen on the other, were most delicious, and not deformed by insects. A gardener who came from Wolverhampton on purpose to see these experiments, said, "If these are Plums, I never tasted a Plum before." The flavour of the Peaches was brisk and piquant, different from those shut up at night, or even those ripened on walls. One thing which astonished me most, was the perfect ventilation. As there was no opening, except at the top, it might have been imagined the air would become stagnant; but instead of this it was in constant motion. The average temperature inside these screens was from 10° to 15° Fahrenheit above that of the external air. The hotter the air the more rapid the circulation, the heated air ascending at the sides, and the cold air falling in the centre. If the soil be covered with coal ashes

the circulation of air is more rapid; the thermometer being placed on the soil thus covered marks a temperature of 5° higher than when placed on the common soil.

My first idea was to erect these screens about 3 feet from a common wall, and plant the trees against the glass, training them to galvanised wires, but so tying as for them not to come in contact with the wire. A great heat is thus obtained during the day, the thermometer sometimes standing at 99°, shaded from the sun; but as the temperature often went down to 40° and 35° at night, I imagined the extremes to be too great for the health of the plants.

I found the hexagonal form of structure produced a more even temperature, and no form that I have yet tried equals this, not only in economy of structure and space, but in giving health and vigour to the trees.

As I have now decided on this form, I am building several of these cylinders. As yet I have not gone beyond 10 feet in height, and 7 feet in diameter, but there is no reason why they should not be 12 or 15 feet in height, and when the inside surface is covered with Peaches, Grapes, or even Roses, it will have a very beautiful effect. Many things have come out in practice which I had never thought of when I first drew the plan of these structures on paper, but everything tending to even a more satisfactory conclusion than I had first conceived possible—real quality both in the leaf and fruit, through the increased temperature and the constant circulation of air, being one of the chief features.—OBSERVER.

MY ORCHARD-HOUSE JOURNAL.

I OUGHT, perhaps, in writing my simple (I fear too much so) orchard-house remarks, to say that the house I allude to is 100 feet long, 24 feet wide, and 12 feet high in the centre; its sides, nearly 6 feet in height, are glass to the ground, and this gives the interior a most bright and cheerful aspect in sunny weather. This is filled with Peaches, Nectarines, and Apricots. My Cherry house is 60 feet by 11, and is devoted to Cherries only.

March 21st.—Guigne or Heart Cherries and Bigarreaus, mostly in full bloom; the trees are all pyramids, covered with their snowy flowers, and are like pyramids of pearls. The exceptions are some late kinds, such as the Late Purple Guigne, and the Florencé. The Duke Cherries, except Empress Eugénie, have not yet opened a bud. It is curious to find some of the kinds of Bigarreaus that do not ripen till two or three weeks after the May Duke, in full bloom nearly a fortnight earlier than that sort. My Cherry house has given me Lettuces with fine hearts all through February. Bees abundant to-day.

March 23rd.—Apricots in myriads, as large as horse beans. It is strange that "OBSERVER," see page 237, does not succeed with standard Apricot trees planted out; his soil I know is iron clay, mine is stiff calcareous clay; but as he succeeds with them in pots in soil of the same nature, his standards ought to do well. I fear he has paid more attention to his standard French trees than to his Apricots, and has not given them so good a position. Here some low standards planted in the central border of a house 24 feet wide, the soil undisturbed, and quite hard, are full of fruit, and I fully believe that the centre of a house of like dimensions planted with standards or half-standards, and the soil kept solid, would, without any risk of failure, produce annually large crops of the finest fruit, and no fruit can surpass the Apricot ripened in an orchard house.

March 24th.—Cold and windy, with frequent storms of hail, rain, and snow, and gleams of sunshine. The orchard house is closed, and is a sort of elysium, thermometer 65° to 70°, some Wallflowers in No. 12-pots, filling the house with their delicious perfume. They are all double, with large spikes of flowers varying in colour from bright yellow to dark brown, such as we used to call "Blood Wallflowers." They were all raised from German seed. Twenty-five sorts are named in the list. They come tolerably true to name. It would seem, judging from their appearance, that they have been crossed with the Brompton Stock, their leaves are so large and succulent, and their perfume seems to be a compound of the Stock and Wallflower; it may be fancy. My plants were raised last April on a gentle hotbed in the open air, and planted out thinly in May. They require room, as in a rich soil they become very bulky by the end of summer. In November those for the orchard house should be potted into 10-inch pots, which should be plunged in tan or cocoa fibre in the house, to keep their roots safe, and remain plunged till the middle of March.

Those for the open air should be potted into 6 or 8-inch pots, protected during the winter, and planted out in March, if mild weather. They are too succulent to resist the severe frosts of winter in the open air. I have diverged from fruit to flowers, but German Wallflowers are an orchard-house luxury but little known, and my orchard-house journal is a full stream, which will overflow and form streamlets.

March 25th.—Frost last night severe, 11°; in the orchard house, with a pan of charcoal lighted at 8 p.m., 1°. The young fruit of Apricots will not bear more than 3° or 4° of frost without injury, even in the dry climate of the orchard house. The blossoms in their early stage will bear from 5° to 6° with only partial injury, but as soon as the petals and calyces have fallen the young fruit are very tender.

March 27th.—Pears and Plums in full bloom. When one compares them with those out of doors, many of which are on the point of blossoming, and reflects that for two entire months to come we are liable to have frost, and that one of a little extra severity may destroy the crop, the comfort and pleasure of orchard-house culture is fully appreciated.

March 29th.—A cold wind and bright sun, the house closed at 2 p.m., at 3 the temperature in the shade 75°. Peaches have set freely, are as large as small peas, and crowded thickly on every shoot. Bees abundant, but seemingly not happy; the pollen is all gone, the nectaries empty, and they seem to be looking for something they cannot find, their tone is sharp, and not that satisfactory humming heard a few days since.

March 30th.—Frost severe last night, register in open air at 22°, in orchard house 34°, with a pan of charcoal lighted at 8 p.m.—T. R.

WHERE ARE FLOWER POTS TO BE HAD?

AMONGST the many advertisements in the columns of this Journal, but rarely indeed the eye falls on one informing us where flower pots are to be purchased, although these are so essential in almost every garden deserving of the name. Moreover, the flower pot very often is called into requisition when there is no garden at all. Why this absence of information should be, is difficult to understand, as other articles much less extensively used are announced from various quarters. Assuredly this cannot arise from any want of enterprise on the part of the manufacturers, yet they make little or no effort to bring their wares under the notice of the gardening world, and such neglect is proportionately injurious to those who want them.

A short time ago I had to look backward over a long series of numbers of this Journal to find an advertisement announcing where flower pots are manufactured, while things not nearly so extensively used are presented weekly to our notice. Neither is the want confined to private individuals, for I happened to know of a London nurseryman whose consumption of flower pots during the year must be immense, nevertheless he has to send upwards of 150 miles for them. Assuredly this ought not to be; and it would be a great boon to many who, like myself, might want £10 or £20 worth during the year if we knew where to order them from, without being obliged each time to ascertain whether the last place from which we had them still exists.

I hope, therefore, you will stir up the memory of your flower-pot-manufacturing friends, and invite them to tell us where good well-burnt pots are to be had, and at what price they can be delivered by railway, &c.

I also hope some of your correspondents will point out what they consider the best form for flower pots, the other points of excellence required, and such particulars as will place them at least on a par with other things in everyday use, for assuredly there is no one to whom the ornamental gardener is more indebted for the aid afforded him than to the potter, and the latter is very remiss in not making his wares better known.—L. M. N.

[We cannot aid our correspondent further than by thus publishing his letter; and we are quite aware that any potter who will make known through our columns flower pots at a moderate price, of less offensive colour, and less coarse than those usually vended, would obtain a large sale.—EDS.]

BELLADONNA LILIES.—In Jersey it is the custom of gardeners to cut down the leaves of the Belladonna Lilies in June, as they say, to make them flower. Whether cutting the leaves

produces the effect or not, I do not know, but I do know that when they have been cut off in this manner the plants have flowered profusely in the autumn.—E. W.

THE GREAT INTERNATIONAL EXHIBITION AT GHENT.

THIS, the fifth at intervals of five years of the great flower shows for which Ghent is so celebrated, commenced on the 28th of March, and remains open until April 5th. A more appropriate place than Ghent could not be found, inasmuch as so many valuable collections of plants exist in the immediate neighbourhood. The great establishments of M. Louis Van Houtte, M. Ambrose Verschaffelt, and other cultivators, contain a very large number of plants of extraordinary size, which can be sent a short journey, but could not be transmitted to a great distance without great risk and expense. The wonderful collection of plants brought together at this early period of the year, for it really formed a colossal spring show, was something to be remembered. We shall attempt a brief description of the Exhibition, but to do it justice an entire number of the Journal should be given up to it.

The interest this Exhibition has excited may be somewhat judged by the fact that 120 Judges were invited from various countries, and almost all were present. England sent 15, Austria, 3, France, 35; Russia, Belgium, Germany, and other countries contributing the rest. Here could be met the great men whose names are household words amongst horticulturists, called together to award the numerous honours which were so eagerly competed for.

Everything was arranged in readiness for the Judges by the morning of the 28th, and that day was devoted to judging. The Exhibition was opened on the 29th by the King and Queen, and the Comte and Comtesse de Flandre, who took a warm interest in the Exhibition, and frequently expressed their admiration. Several of the most eminent horticulturists and botanists present were introduced to their Majesties, and Mr. Henry Veitch was specially sent for to attend their Majesties, and receive their congratulations on the new plants shown by his firm.

Their Majesties and the Comte and Comtesse de Flandre came purposely from Brussels; and the Mayor of Ghent, the Comte de Kerchove de Denterghem, who is the President d'Honneur of the Royal Agricultural and Botanical Society of Ghent, took a warm and active interest in the Exhibition, and his courtesy to all calls for special acknowledgement. Will the time ever come when in England we shall see the Royal family, and those high in authority, giving such warm and practical aid in the advancement of horticulture, and placing it in the same high position amongst the arts exhibitions as it holds in Belgium? Especial acknowledgements are due to M. Vandennecke de Lembeke, the President, to M. Charles Leirens and M. E. Claus, the Secretaries, and M. R. D'Huyvetter, the Treasurer, and the able Executive Committee. All the arrangements seemed to be perfect, and there was no confusion whatever.

Their Majesties and the Royal family were received by the Burgomestre, the Comte de Kerchove; M. Vandennecke, and M. Ambrose Verschaffelt, who accompanied the Royal party through the entire Exhibition. In the evening a grand banquet was given to the Judges and Council of the Society, at which the Comte de Flandre presided, and their Majesties and the Comtesse de Flandre were also present. As Englishmen we are not always easy to please, but there was no room for grumbling here. It was a magnificent scene, and the arrangements perfect.

The Exhibition was held in the Hotel Casino, a fine building devoted to fashionable promenades, concerts, &c., where there is a very extensive permanent building comprising a very large salon, staircases, and anterooms; and passing out on to the staircase leading to what we may call the Floral Hall, a very large building only completed in time for this Exhibition, and, for such a purpose, what an Exhibition met our view! No formal straight tables to meet the eye, but the large space was laid out as a parterre, and all round the building were huge banks of magnificent Palms, tree Ferns, and other ornamental plants, some of them fully 20 feet high. Glorious tree Ferns and giant Palms were dotted here and there, and then came banks of Azaleas, Camellias, and other flowering things. It was a grand scene, and there was only one fault to be found with

it—the building, large as it is, was too small. The writer of this tried at least a score of times to hunt out all the treasures of the Exhibition, but it was a labour to do so; there was so very much to be seen, and the plants were in some instances so much crowded. A very large number of plants which richly deserve notice must be passed by.

How the stars of Belgian horticulture shone in all their glory here! Those giants amongst nurserymen, Van Houtte, the Verschaffelts, the Van Geerts, and many others, sent their colossal plants and rare treasures; and some of the private collections, such as those contributed by Le Comte de Kerchove, President Vandennecke, and other private growers, were sufficient to make a large exhibition. To give some idea of the size of many of the plants sent, we just name that the Botanic Gardens here, of which M. Van Hulle is the chief, contributed an extraordinary lot of fine plants. Some of these were 30 feet high; one grand Palm was 25 feet high, and fully 30 feet through. M. Ambrose Verschaffelt contributed a vast collection, and was the winner of fifty-three gold and other medals. His superb collection of Palms contained a specimen of *Phœnicophorum sechellarum*, 8 feet high, and with grand foliage; a *Thrinax elegans*, 9 feet high; a wonderful plant of *Cibotium regale*, and a very fine example of *Latania Jenkinsiana*. We very reluctantly are obliged to pass over many other wonderful plants in this and M. Van Houtte's extremely fine collection, where also we noticed another remarkable specimen of the Thief Palm. M. Van Houtte was also a most extensive exhibitor, and carried off a large number of medals. In the Comte de Kerchove's collections we noticed a wonderfully fine plant of *Phoenix pectinata aurea*.

Standing again on the balcony looking to the vast flower garden beneath, what a glorious sight it is! those grand banks of Azaleas resting amongst those giant Palms and stately tree Ferns. Then there are huge banks of stove and greenhouse plants in flower, many of them very much superior to what we expected to find, and a very marked improvement in their culture has taken place within a few years. Glorious Acacias of great size and beauty, huge tubs of *Calla æthiopica*, each with about thirty blooms, and a host of other things are easily recognised. Away in a westerly direction we trace an edging of lovely Lily of the Valley, and from well-grown Mignonette and Heliotrope rises refreshing fragrance. Those grand masses of Azaleas, what a brilliant combination of colours! the free use of whites and softer colours toning down the brilliant hues of others. Nearly every plant forms from half to two-thirds of a globe, and on short stems. There is no trace of the pyramidal form generally adopted in England, and one is not a whit more formal than the other. In a small state they make most suitable decorative plants for the table and greenhouse. Round about these are large banks of Camellias, and what plants they are! Some 5 to 6 feet high, most symmetrical pyramids, and in admirable health, with rich green foliage, and densely flowered. There is as wide a difference between the ordinary Camellias of English gardens generally and these plants, as between Turner or Veitch's specimen Azaleas and what are often sold by auction. We have much to learn in Camellia-growing, and we cannot do better than take a leaf out of our Belgian friends' book in this matter. Do we not give them too much light and air sometimes, and not sufficient water and stimulants at others? This subject is worth looking into, and we will very soon recur to it. Anything finer in Camellia-growing could not possibly be seen.

We shall next week give a report of many of the leading features of the Exhibition.

TOBACCO FUMIGATION.

OBSERVING in your pages a mode of smoking greenhouses to destroy green fly, allow me to suggest one a little different, and practised here for years with complete success. Instead of charcoal use thick blotting paper steeped in a solution of nitre, and carefully dried, and when used rolled up in layers alternately with tobacco paper, damp. Do not make the solution very strong, as then the paper would consume too rapidly. An old broken flower pot will answer quite well to burn the material in. I adopted the charcoal plan formerly, and nearly suffocated myself with the fumes.—CHARLES GUTHRIE, *Tay Bank House, Dundee*.

THE VARIEGATED JAPANESE HONEYSUCKLE flowered freely on the west wall of my house at Gipsy Hill last autumn. The

flower and its perfume very much resemble those of the Evergreen Honeysuckle.—W. W. T.

MR. WILLIAM PAUL'S SHOW OF SINGING FLOWERING PLANTS.

THIS Exhibition opened on Saturday last, and will continue till the 11th instant. It is held in the Eastern Conservatory Arcade in the Royal Horticultural Society's garden at South Kensington, and whilst totally different in its arrangement, and to a considerable extent in the subjects employed, from the display furnished last year by Mr. W. Paul, it is equally charming and effective, and no one who has an opportunity should miss seeing it.

Commencing at the farther end from the Conservatory, on the right is a bank of plants some 12 yards in length, consisting of Rhododendrons, Azaleas, Lilacs, Double-flowering Peaches, Deutzias, Clematises, a fine variegated Hydrangea, Correas, Cinerarias, and a variety of other plants of different heights, arranged not to produce a flat or uniformly sloping surface, such as we frequently see on exhibition stages, but one diversified by the introduction of taller plants among those of less height, in imitation of hill and dale in nature. This is the idea which Mr. W. Paul has endeavoured to work out, and we think he has done so most successfully.

The next group is one of Acacias, among which *A. Backhousiana* and *A. eriocarpa* are conspicuous as free-flowering handsome kinds, together with *Cytisus Atleanus*, the whole edged with Lily of the Valley. Near this is placed a standard *Genista purgans*, with a head forming one mass of golden blossom. Such a plant would form a highly ornamental feature on a lawn.

Next comes a splendid group of Tulips. Of these a few of the most conspicuous are *Roi l'épin*, white and crimson; *Fabiola*, purplish lilac and white; Standard, gold-striped and crimson; *Couleur Cardinal*, red; *Reine des Cerises*, white and crimson, very beautifully striped with gold; *Bride of Haarlem*, white and deep red; *Rose Gris de Lin*, very distinct, soft rose and white; *Florida*, good, distinct, white striped with purplish violet; *Ariadne*, fine crimson; *Keizerskroon*, the *Tournefols*, and the *Pottebakkers*.

A group of Heaths adjoining the Tulips is particularly worthy of attention, as containing magnificent examples of *Erica Wilmoreana* with spikes 18 inches long. Then comes a long stage of Camellias, with four rows of plants in small pots in the front, and larger specimens at the back. Small as the plants are, most of them are in beautiful bloom, and as it is rarely that so numerous a collection both of new and old varieties is brought together at one place, they will be of very considerable interest to cultivators of this gorgeous-flowering shrub. A few of the most remarkable are *Lavinia Maggi*, with large beautifully striped flowers, like a flaked Carnation; *Belle Jeannette*, rosy crimson, with a faint white stripe in the centre of each petal; *Innocenza*, milky white, with more substance in the petal than the *Double White*; *Princess Frederick William*, very free, Carnation-striped; *Cup of Beauty*, very fine, white; *Contessa de Hainaut*, lovely blush, finest of its colour; *Bicolor de la Reine*; *Souvenir d'Emile Defresnes*, crimson, with a white band up each petal; *Monteroni*, finely copped, pure white, petals of fine form; *Princess Bacchiocchi*, scarlet crimson, more intense in colour than most of the red Camellias; *Prima Donna*, blush, very delicate in colour; *Rosca spectabilis*, bright rose, very beautiful; and *Etoile Polaire*, a lovely miniature crimson, striped with white.

The next group is one of Aucubas, both green-leaved and variegated, male and female in flower, and many of the latter in berry as well, besides several other variegated Japanese plants. Pot Roses occupy a stage between these and similar group of Aucubas, and among the Roses a specimen of *Madame Boll* is very fine. *Charles Lefevre*, *Madame Moreau*, and *Lord Macaulay*, the last-named very bright in colour, are also very striking.

Hyacinths, upwards of two hundred in number, fill a stage similar in length to that occupied by the bank of miscellaneous flowering plants at the entrance, and form the finest display of that flower seen near London during the present season. The spikes of many are magnificent. *Solfaterre*, crimson scarlet, is remarkably fine; so are *Argus*, dark blue with a white eye; *Duc de Malakoff*, fawn; *Snowball*, white; *Van Speyk*, *Von Schiller*, pink, striped with crimson, forming a very close pyramid; *Haydn*, mauve; *Gigantea*, *Charles Dickens*, *Mont Blanc*, *Ornament de la Nature*, very delicate rose; *Garrick*, light and dark blue; *Lina*, beautiful red; and *Lord Macaulay*, crimson, broad petals. *Bird of Paradise* has no less than eight spikes from a single bulb, and *Carnegiea* five, forming masses of bloom which would be valuable for general decoration in conservatories, though of course they would not pass muster in a florist's point of view.

Retracing our steps from the Conservatory by the front of the arcade we find a series of groups, some arranged on small tables in the spaces between the windows, others on the floor, and consisting chiefly of Hyacinths, Narcissuses, Cinerarias, fine-leaved Pelargoniums, and Euphorbias. There is also a small group of the beautiful *New Double Scarlet Thorn*, which is valuable for forcing in a small state, and when large will, doubtless, prove a highly ornamental tree for out-door decoration. In the groups on the small tables just referred to the new Hyacinths are chiefly to be found, and of these Mr.

W. Paul was this year the most successful exhibitor, taking first-class certificates for *King of the Yellows*, the finest flower of its colour and the best Hyacinth of the year; *Grand Monarch*, pale blue, striped; *Clio*, pale blue with a white centre, and dark blue blotches on each segment, decidedly good; *Couronne des Bleus*, and *Autocrat*. *Seraphine*, delicate grey, with a carulean tube, is also very pretty, and promises to be fine for exhibition.

Narcissuses are unusually fine, some of the spikes having no less than nineteen flowers; and of Euphorbias there is a fine display, though some had suffered from the journey. The best are *Hyacinthiflora grandiflora*, white; *The Bride*, white, tipped with red; *Corsicans*, peach; *Acuminata*, fine reddish scarlet; *Delicata*, pink, tipped with white; and *Coccinea major*, red. There are likewise boxes of cut Roses, including fine buds of *Madame Falcot*, *Madame Margottin*, a new, very sweet, and very double pale yellow Tea; *President*, very fine; *Lady Suffield*, very fine form; and *Globosa* with petals turned over, forming a crimson ball. In a group of fine-leaved Pelargoniums we noticed *Jason*, with beautiful golden leaves, one of the finest of its section, and *Prince Silverwings* and *Snowdrop*, the latter with a broad white edge, and a large finely formed scarlet flower.

The greatest credit is due to Mr. W. Paul for his fine exhibition, and that it will be highly appreciated by those who may have the good fortune to see it we have every confidence.

BANGALORE HORTICULTURAL FÊTE.

THE Bangalore Horticultural Fête, which took place yesterday (December 31st, 1867), was everything that could be desired on the part of spectators, with one omission, of which more anon. At an early hour, 3 p.m., carriages, "shays," and "shanderydaws" commenced to rattle along the two-and-a-half-mile road that leads from the Cantonment of Bangalore to the Government Lal Bagh Gardens, and up to five or half-past five o'clock, the stream of vehicles still continued, reminding one of a Derby day on a small scale, or a Presidency uproar on a large one. A portion of this road was well watered, and as the drive is a pretty one, the time *en route* passed pleasantly in such racing as the road afforded. At this sport notorious hack gharrys of Bangalore appeared to be adepts after their own peculiar fashion, and it was amusing to see the dusky half-naked *Jehus* drive their skinfulls of carrion into a wild "spurt" of fifty yards, which inevitably terminated in a dead stop and a cloud of dust, thick as the smoke of a sixty-eight pounder. At the gates of the garden, and along the road leading to the tents, the Commissioner's escort of Mysore horse was stationed and looked very well in its scarlet apparel, though the troopers' appearance would be much improved if they would cease to tie their puggies round their jaws with napkins which gives them the laughable effect of being afflicted as a body with toothache and tie doloureux. The tents, which were considerable in extent, and connected by passages, to which matting spread overhead afforded a protection from the sun, were pitched on a level piece of ground opposite the bandstand, and were gaily decorated with flags and streamers.

Inside, the show of Flowers, Vegetables, and Fruit, and especially the latter, exposed for exhibition on long rows of shelves, was something worth seeing in England, and perfectly astonishing in this country. Indeed a basket of Apples, the property of a native gardener, and which obtained the first prize, was of such superlative excellence, that your correspondent can truly say he has never seen a basket of Apples surpass it at home. This improvement in the quality of the fruit must be very satisfactory to the Horticultural Society, for a few years ago there was but one kind of Apple at Bangalore, and that of the most crabbed description. It would be vain to attempt an enumeration of the different fruits that lay in tempting profusion upon the shelves, but I was disappointed in the Peaches and Strawberries, of which the public had hoped to see a goodlier show. This cannot be said of the Grapes, however, and one dwarf Vine, the property of Major Packle, the Secretary of the Society, was especially worthy of notice. Planted in an ordinary-sized flower pot, this handsome little tree was covered with large bunches of splendid ripe Grapes, but the most extraordinary part of its history was the fact that but one year ago it was taken as a cutting from the parent stem.

Among the flowers one could not help being struck with the beauty and good taste of Major Boddam's collection, and the same may be said of the cut flowers exhibited by Signor De Vecchi. The latter gentleman also exhibited some specimens of silkworms and silk, the last in softness and lustre being very remarkable. General Haines deservedly obtained a first prize for a lovely *Géant des Batailles* Rose, whose beauty, could it only be made to last long enough, might be justly said to be "a thing of joy for ever."

Among miscellaneous articles of exhibition, your correspondent remarked an American Grass, which he believes is indigenous to Rhode Island, exhibited by the Secretary as an excellent Grass for lawns. It is impossible to doubt the operation, as the specimen exhibited was very similar to the very richest "after grass" one sees in England in a first-class meadow field. The band of the 16th Lancers was in attendance, and discoursed most excellent music in the gardens outside, to the delight of a well-dressed crowd that sauntered about the lovely *parterres* of the Lal Bagh. Among the company present were Mr. Bowring, General Haines, Dr. Norman MacLeod, and Dr. Watson, and, in fact, the whole of Bangalore society, together with a

considerable portion of the outside world. Your correspondent has not heard how many individuals paid their rupees for tickets for admission, but he imagines there could not have been less than eight or nine hundred people present, of whom, owing to careful and wise arrangements on the part of the Committee, a very small portion were natives. It was long after dark before the last carriage reached home from a very pleasant entertainment.

The following extracts from the official Report in the supplement to the *Mysore Gazette*, dated Bangalore, 1st February, relate to this Show.

There was a marked improvement in the quantity, as well as quality of Canthflowers. Those exhibited by Nunjoondappa, and a single specimen by Nunjapah, were remarkably fine; whilst those displayed by the Lunatic Asylum and Colonel Clerk were also very good. In Carrots throughout there was a marked improvement this year, as likewise in Turnips and Red Cabbages. The Savoy and ordinary Cabbages and Potatoes also decidedly came up to the mark, as likewise some very fine Celery of Colonel Clerk's. The Celery of Mrs. Bowring was second best; but native production in Celery was too old and coarse. There was a falling-off in Asparagus and Vegetable Marrows, the Jurois missing as regards the latter the crinkled varieties of last year. Parsnips, Artichokes, Leeks and Sea-kale, which were hardly represented at the last Show, were very fairly represented this time; and there was the novelty of a dish of Brussels Sprouts.

The following flowers and plants were exhibited:—*Arum indicum*, *Achillea*, *Asters*, *Victoria*; *Achianenes gigantea*; *Antirrhinum*, seven varieties; *Camellia* *Ealsams*; *Bellis perennis* (Daisy), *Egonia discolor*, *grandiflora*, *dipetala*, *racemiflora*, *nigricans*, *fuchsoides*, *Rex*; *Calceolaria*, one shrubby kind; *Calliopsis nigra speciosa*, *Burridgei*, *Drummondii*, *tinctoria*; *Calliopsis involucreata*; *Camellia*, one specimen in bud; *Campaulia*, common kind; *Canna Warscewiczii*, *Chrysanthemum*, a dark red variety; *Cineraria maritima*, *Clusia elegans*, pink and white; *Cleome speciosa*; *Convolvulus mauritanicus*; *Caladium bicolor*, *Wightii*, *marmoratum*, *argyrites*, *picturatum*, *amabile*; *Crotou*; *Cuphea emensis*, *Deeringia celosoides*; *Dahlia* dwarf, one specimen; *Dianthus*, (Carnations) three varieties; *D. Heddewigi*, five varieties; *Krysinum arkaunum*; *Euphorbia fulgens*; *Ferns*, thirteen varieties; *Fuchsia*, seven varieties; *Zonal Pelargonium*, scarlet series, three varieties; pink, two varieties; cherry and white, one variety; *Cape Sweet-scented*, two varieties; *Heart-rose*, six varieties, *Heliopsis*, *Ivy*, *Larkspur*, common blue, pink, and variegated; *Lium coccineum*; *Lobelia cardinalis*, *L. speciosa*, three varieties; *Maurandya*, three colours; *Myosotis*, one common kind; *Nemophila maculata*, *Nolina lanceolata*, (*Eoothera Drummondii* nana, *Papaver* (Poppy), two colours; *Pentstemon*, three kinds; *Petunia*, one hybrid, *Dunnett's*; also rose-coloured and common white; *Phlox alba*, *P. Black Warrior*, *Empress Eugénie*, common; *Portulaca* single, three colours; *Roses*, nine distinct varieties; *Russelia*, one variety; *Salvia splendens*, *S. argentea*; *Sanvitalia*, single and double; *Tropaeolum Tom Thum*, Scarlet, golden yellow, *Trentham Rose*, common orange, common dark red; *Taxsonia ignea*, *Verbeena*, white, coral, purple, pink, scarlet, dark red; *Zinnia*, double.

Fruits consisted of Apples, Peaches, Strawberries, Raspberries, Oranges, Guavas, Pomegranates, Shadlocks, Plantains, Plums, and a Dwarf Vine in a pot just one year old with five bunches of ripe Grapes on it.

The vegetables were as follows:—Potatoes, Savoy, red and white, Cabbage, Brussels sprouts, Cauliflower, Carrots, Knol Khol, Beet, Lettuce, Endive, Artichokes, Jerusalem Artichokes, Celery, Onions, Vegetable Marrow, Cucumber, Parsnips, Radishes (long and Turnip), Kidney Beans, Asparagus, Windsor Beans, Peas, Tomatoes, collections of Pot Herbs—viz, Thyme, Parsley, Mint, Sage, &c., in bunches, Sweet Potatoes, fresh Capsicums, fresh Nepal Chillies, Pumpkins, Boudakai (*Hibiscus esculentus*), *Eriajals* (*Solanum melongena*), Turnips, and Yams.

Mr. Rivers, of Sawbridgeworth, had written to the Secretary of the Society, and the following is an extract from the letter:—

"From your height, 3000 feet above sea level, I am quite inclined to think you could cultivate Peaches, Nectarines, Plums, Pears, and Cherries, on low bush trees, for this reason, that they are more easily protected, when necessary, from a too powerful sun. Near Sydney the climate of which is far too hot for Gooseberries and Currants, they succeed in their culture by planting them in selected sites, and protecting them by a roof of strips of Eucalyptus bark, not too close so as to exclude all the sun and air: you might do it by a light calico awning. If you can grow 'excellent Apples' you need not feel any doubt about succeeding with other European fruits. Your courageous knife work is very interesting to read of: as far as I have learnt, it is the want of it that leads to so many failures in fruit culture in hot climates. The present gardener to the Pasha of Egypt, an Englishman, on his first arrival cut down all the Muscat Grape Vines which were in a very neglected state; the native gardeners were horrified; and would not believe their eyes when they saw them full of fine fruits a few months after they were 'ruined.' Your method of pot-making seems sound, but 13-inch pots would give you less trouble, as trees will grow in them for several years. I now endeavour to encourage the roots to come to the surface for warmth, by giving the trees three or four surface-dressings during the summer. It is well, as you suggest, to keep the roots from going too far down, not, as here, to prevent their striking down into too cold a medium, deep earth, but to prevent their becoming too large, in which case breaking them proves often too great a shock to the tree."

TRITELEIA UNIFLORA REMAINING DORMANT.

WHILST travelling in Italy during the winter of 1865-66 nothing pleased me more in the various gardens I visited than the numerous pots and patches of that lovely little flower *Triteleia uniflora*, and I made up my mind to grow it in my garden as soon as I got home.

Before I left Rome one of the gardeners at the Botanic Gardens gave me a large potful of bulbs. These I carefully planted as soon as I reached home in April. They came up very luxu-

riantly before Christmas, and though planted in a very exposed situation, and totally unprotected during that extremely severe winter, bloomed beautifully in May, 1867.

I was somewhat annoyed this spring to find no green leaves appearing from any of my patches of bulbs; so I dug down to the roots, and found every bulb in a dormant state, and showing no sign of growth. I should like to know whether any of your readers have noticed this peculiarity in *Triteleia uniflora*.—H. HARPER CREWE, *The Rectory, Drayton-Beauchamp, Tring*.

FLOWERS OF OTHER DAYS.

I WAS very much pleased to see the article with the above heading, in the Journal of March 12th, and I have no doubt with such resuscitating tendencies as that communication indicates, the flowers of the past will be the flowers of the future. If, after the manner of "H. HARPER CREWE," those who admire these old denizens of our old gardens, would bring before us what good things they possess, and inquire after the good things they are desirous to obtain, very much good might be done; and if a small space in the Journal were devoted to inquiries after these old favourites, and offering others in exchange, very many plants supposed to be lost would be brought into notice; and here goes for a start.

Any plant out of a collection of seven hundred will be given for a plant of *Ramondia pyrenaica*, or *Verbascum Myconi*, as it is sometimes called; also for *Dracecephalum grandiflorum*, and if "H. HARPER CREWE" will communicate with me, I can tell who has both *Baptisia australis* and *Narcissus triandrus* to spare.

Michauxia campanuloides is a fine and a rare plant. I introduced it a few years ago to the Liverpool Botanic Garden, where it was much thought of, but I should say it is more of a Passionflower-looking plant than a Lily. I do not grow it now, as I have no room for biennials.

The old Double White Cowslip has become extinct with me. The Double Yellow, or Hose-in-Hose, has been charming for some time. I have been gladdened with a pretty little plant from Lapland, which has been in flower for some weeks—*Caramine trifoliata*, a real gem, pure and white as its native snows.

Fumaria cava is also charming, and *Draba aizoon* is showing its golden tufts of bloom, and *Gentiana verna* is all but in flower; but I must rein-in my horse, or I know not where I shall gallop to.—THOS. WILLIAMS, *Path Lodge, Ormskirk*.

[You reined-in too soon, you might have kept on for another stage—that is, another sheet of paper.—EDS.]

NEPETA NEPETELLA.

I FIND, since I wrote to you about the *Nepeta*, that I have made a mistake in the specific name; it is *nepetella* not *nepetos*. I have also heard it called *Macrantha balsamea* and fragrans.

The first time I saw it bedded-out was at Hampton Court, in 1865, and on referring to some notes made at the time, I find it was labelled *Nepeta nepetella*. I thought it looked very pretty there, but from the appearance of the beds I think the old plants were allowed to remain in them, a course I would not advise, as I find it looks and does best when treated as an ordinary bedding plant.

It was bedded here last year as a third row from the front, Crystal Palace *Pelargonium* being the row in front, and *Trentham Calceolaria* immediately behind. There is another peculiarity in this plant which I have not seen in any other. When seen from a distance on a bright sunny day, it seems to throw up a blue light for 9 inches or a foot immediately above it, which gives it a singularly pleasing effect.

With regard to where it may be purchased, Messrs. Veitch had a stock of it two years since, but as it was not much in demand it may have shared the fate of some others of our old plants.

If treated as an ordinary bedding plant, I can vouch for its succeeding and looking well in lines in long borders. I do not think it looks quite so well in masses, but as I only saw it in masses at Hampton Court, and as probably the plants were old, it may look as well in masses as lines when treated differently. It has been used largely here for the last six years, and it has never failed to look and do well, whether the seasons were dry or wet.

I should like to say a word for our old herbaceous borders.

We have several here, and just now they look beautiful, while those parts of the garden devoted to bedding plants are bare. With the addition of a few bedding plants in May, the former may easily be made to look gay all summer, and where cut flowers are much in request they furnish a good supply without having to cut from other portions of the flower garden. They are also excellent trial grounds for new bedding plants, so that apart from their beauty at this time of year, they are very useful, and I think most gardeners who possess them would hardly like to do away with them altogether.—J. W. K.

[It varies in height according to the soil, from 1 to 4 feet. The following is its botanical description:—"Plant erect, pubescent, or clothed with hoary tomentum; leaves on short petioles, lanceolate, crenate, rounded or cordate at the base, clothed with hoary pubescence or tomentum on both surfaces; racemes many-flowered, nearly simple; bractæ scarcely longer than the pedicels; calyx tubular, incurved, with an oblique mouth; corolla twice as long as the calyx. Native of the South of Europe, especially on the mountains; as of Spain, Provence, Switzerland; Italy, from Piedmont and Liguria to Naples." There is no genus of plants called *Macrantha*. *Nepeta nepetella* passes into many varieties—varieties so strongly marked as to have been mistaken for species, among them are *Cataria nepetella*, *Nepeta amethystina*, *N. paniculata*, *N. lanceolata*, *N. graveolens*, and *N. arragonensis*.]

VALUE OF ORCHIDS.

MESSES. WALKER & ACKERLEY, auctioneers, Liverpool, sold on the 6th of March the remainder of Mr. Machen's choice collection. Of a *Dendrobium Falconeri*, said to be the finest plant in the country, Messrs. Veitch & Sons, of Chelsea, were the purchasers at the sum of 67 guineas. Two years ago Mr. Machen bought the plant, a very small one, for £14s. Since that time he grew it into the fine specimen sold as just mentioned, and which is thus described:—

"*Dendrobium Falconeri*, finest plant in this country of this scarce and lovely Orchid, with a leading shoot 5 feet 7 inches long, and having twenty-five side branches or plants, most of them having good roots; another leading shoot, 3 feet 8 inches long, has twenty-three branches, sixteen of which have roots and seven mature shoots, with bulbs; another shoot, 3 feet long, with three strong shoots, having roots, two strong branches, four mature branches, with bulbs, and sixteen side shoots or plants; another shoot, 3 feet long; ditto, 1 foot 9 inches; ditto, 1 foot; ditto, 2 feet 5 inches, with nine plants; ditto, 2 feet long, with eleven side shoots or plants."

NEW BOOK.

Cottage Gardening; Suggestions on Cultivation, Selection of Seeds, &c. London: Houlston & Wright.

This little book is written by an amateur contributor to our columns, and contains an enlargement of observations addressed by him to cottagers at the close of the Handsworth Floral and Horticultural Exhibitions, and for them and similar cultivators of small gardens it contains some useful suggestions.

WORK FOR THE WEEK.

KITCHEN GARDEN.

KEEP the Dutch hoe at work during this fine weather, not only to destroy weeds, but to prevent the ground becoming dry and cracked from rapid evaporation. Stir the soil amongst all advancing crops. Earth-up *Cabbages*, and water *Cauliflowers*, *Beans* and *Peas*, earth-up, and stake if necessary forward crops, and keep sowing successions of the Windsor *Beans*, and the *Marrows* and other large *Peas*. The *Victoria Marrow* is an excellent *Pea*, considerably earlier than, but not so good a bearer as *Knight's Tall Marrow*. The new sorts will be sufficiently tested this season. *Kidney Beans*, sow a few of the *Early Negro*, or *Fulmer's Forcing*, on a warm border, also a number in pots to be placed on a slight hotbed, and gradually hardened off and turned out when all danger from frost is over. *Radishes* and *Turnips*, sow on a warm border. If sown in alternate rows the *Radishes* will be pulled out of the way of the *Turnips*. To have the latter juicy and sweet sow every fortnight till August. The *Snowball* is an excellent early variety. Follow with the *White Dutch*, which is the most general favourite in the kitchen. Forward all your *Tomatoes*, *Capsi-*

cums, *Egg-plants*, *Ice-plants*, and all others in slight hotbeds, as they severally want more pot room and air. *Vegetable Marrows* and *Cucumbers* may now be sown for the summer crop out of doors. There is no want of long *Cucumbers* for early forcing, but really good sorts for pickling are very difficult to obtain. The frames in which early *Carrots*, *Radishes*, &c., were sown may now be removed for other purposes, and a few hoops placed over the beds ready to have mats thrown over them on cold nights. The hand-glasses over *Cauliflowers* may remain off while the nights are mild.

FRUIT GARDEN.

If you have any doubts about the names of recently planted *Peach* and *Nectarine* trees and any of the old ones, mark them before they are out of blossom—that is, mark if the flowers are small or large, by cutting a notch or number on a stick for one kind of flower, and another number for the other kind; two numbers will do for the whole. This is the first regular step towards ascertaining the name. The glands and serratures, if any, on the leaves, will be the next step by-and-by, and you will then have a chance of making out the name by consulting Dr. Hogg's "*Fruit Manual*." As yet there is a fair promise that *Peaches* and *Apricots* will set well. Continue to disbud them gradually, thinning-out buds from the strongest shoots first. In cold exposed situations plantations of *Strawberries* made now from plants pricked out thinly last autumn in a sheltered situation, will succeed better if transplanted with balls than if the plantation had been made in the autumn. The ground should be previously well trenched and manured; except for new kinds there is no method of making fresh plantations comparable to that of turning out plants forced in pots.

FLOWER GARDEN.

Newly planted trees and shrubs will require strict attention in regard to water, as they already indicate the want of it. It is better to give them a thorough soaking at once than to give them a little water frequently repeated; and after the surface of the ground is dry fork or hoe it over, and then mulch with short grass to prevent the evaporation of moisture. The same remarks apply to newly planted annuals, which must be shaded as well as watered. Turf which has been recently laid down requires great attention. It will be a good plan, after giving it a thorough soaking of water, to dress it over with old tan or leaf mould, and then shade it by covering the ground with any refuse branches that may be lying about. Put in a successional crop of *Sweet Peas* or any other annuals that were sown early in the year. Sow *Ten-week Stocks* for transplanting. The finer kinds of *Gladiolus* which have been brought forward in pots may now be planted out, giving a deep, rich, and well-drained soil; but it will be as well to protect them by an inverted pot at night until all danger of frost is over. Attend to covering half-hardy shrubs and trees.

GREENHOUSE AND CONSERVATORY.

In this central place of attraction, the conservatory, there will be some difficulty to contend with for a few weeks. Forced *Roses*, *Lilacs*, *Azaleas*, &c., will be going out of bloom, and must be removed to give place to a fresh lot; but where can they be sheltered till they become hardened enough to bear the open air? Every one must answer this question according to his means. This is the best time to cross-fertilise the finer varieties of *Rhododendrons* and *Azaleas* which have been forced, as none of the more common sorts can now interfere with the experiment. Orange trees require particular attention when they are making their young wood. Stop luxuriant shoots at the fourth or fifth joint; no one part of the head should be allowed to grow stronger than the rest. Young trees may require some of the stronger branches to be tied down for a time, this will strengthen the others. Climbers for this house should now be planted if additions are to be made to them this season, and see that the young growths of the old ones do not become entangled from want of training. In the greenhouse plants will require all the air that can be given them, and they will be very liable to become very dry on that account. Water them late in the afternoon, and damp the paths and all empty spaces freely. Give them, besides, a gentle syringing three or four times a-week when the weather is fine. These plants require constant attention now to stopping and regulating their growth.

STOVE.

No opportunity should now be lost to pot all plants that require it. Plants that have been growing for some weeks, particularly young ones, will now require to be stopped more or less in order to make them bushy. Never make use of a

stick to give form to a plant that can be managed by pinning and stopping. Many plants will require slight shading in the middle of the day, but this should be removed early. After shifting the greater part of the plants keep the house closer for a week or two to encourage the roots to strike freely into the fresh soil; keep up a moist atmosphere also, and give less water to the roots, as the fresh soil after the first watering will be moist enough for some time. *Rondeletia speciosa* is an excellent plant to flower in the conservatory for seven or eight months in summer. It is rather difficult to grow it so as to form a good specimen, and more so to propagate it by cuttings; but if there are young shoots low enough, layer them in the pot, and they will root freely in three weeks.

PROPAGATING PIT.

After the supply for the flower beds is propagated and a little forwarded, put in for a reserve a quantity of cuttings of such plants as flower late in the autumn to take the place of those which go off in September. All the *Heliotropes* for forcing next winter should be propagated now, and kept cramped in small pots through the summer. Any other plants that are found difficult to preserve through the winter should now be propagated while the pit is at work, and if kept stunted in small pots during summer they will become so hardened and stocky as to keep with ease through the winter. As these pits are the last places for propagation, and as this work does not admit of large portions of air being given, they must be regularly shaded in hot dry weather; thin bunting or calico should be used for this purpose, mats darken too much.

PITS AND FRAMES.

Proceed with potting-off all plants for bedding-out; those which have become established and hardened may be removed to temporary pits, and covered at night with mats.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Dwarf Kidney Beans.—Not having a pit at liberty, turned out a number of strong plants of Kidney Beans from 5-inch pots into 10-inch pots, and gave them the benefit of a pit for a time, in order that they may succeed those now producing. After the present time this useful vegetable will do very well in a frame with a mild bottom heat. No vegetable is more partial to a dry heat in winter and early spring, provided the dryness in the atmosphere is counteracted by syringing and evaporation from saucers, &c. The plants will produce more plentifully in a roomy house than in a dung pit even now; but there is always a risk in taking them into houses. We have grown them for years in vineries, and never had a thrips on them; but we have also had them so infested that we were glad to remove them carefully, so as to leave as few of the insects as possible. Clear soot water for syringing is good for keeping red spider and thrips away, and we have more faith in preventives than in cures. Many a pound goes for fumigating plants, when it would be the best economy to clear all out and save the trouble. When smoking is resorted to there should be no waiting to see a second or third insect, one should be sufficient. Smoking after the leaves are incrustated with insects is worse than labour lost. It is rarely that such plants do good afterwards. Smoking will kill thrips; but as it always appears on the older leaves, if these be removed carefully in good time, and the syringe freely used, the thrips will generally be kept under. When we grew very early Cucumbers we examined the leaves carefully, and if a solitary thrips was discovered we pounced on it with the point of a wet finger. This could be done only when the plants were grown on a trellis, and in such a place that one could walk or pass underneath them. Quickly as they jump, the eye and the finger of a young lad can be more nimble still, and they cannot jump when encased in moisture. Plants can be fit for little else but the furnace when thrips is seen on the upper surface of the leaves.

Cucumbers.—Those in frames and in a pit heated by hot water are running a very equal race. Those in the frame have required much less attention. In low pits, heated by hot water, the plants require more watching in changeable weather. It is advisable to use shading as little as possible, and in dull days to moderate the heat given, instead of affording too much air; but after two or three days, when no sun appears, the plants are apt to suffer when the sun comes out bright all at once. Sprinkling the floors and walls with water will often then neutralise the change, and if the glass is good the plants may even be sprinkled, especially on the lower side of the

leaves. In such bright sun, after dull weather, it is of importance to have the heating medium tolerably cool before the sun strikes strongly on the glass. In large Cucumber houses this additional care is less needed, as, from the greater body of air to be heated, sudden changes are less felt. When Cucumbers are wanted regularly in winter, there can be no comparison between steep-roofed houses and flat pits, and the same may be said of Melons in summer, for though five Melons are grown in frames and flat pits, we have no hesitation in saying that Melons grown on a trellis and with plenty of sun will, size for size, be generally heavier than those grown and trained on a bed.

FRUIT GARDEN.

Strawberries.—There was only one little operation out of the routine alluded to in previous weeks' notices, and it may be interesting to mention it for the benefit of beginners. As a general rule with us this season, Strawberries have been longer in setting than usual. There was a good deal of dull weather, but there was also sun enough now and then to complete the fertilising process. Even in our Peach house, with the roof at an angle of 45°, and shelves tolerably close to the glass, the best position we have ever had for free setting, the pots continued longer in full bloom than usual before the berries began to swell. We used to grow many on solitary shelves in pits, as what may be termed stolen crops; but these positions always did better for swelling-off the fruit than for setting them well, owing to two causes—viz., the comparative flatness of the roof, and the greater moisture in the pits, proceeding from the other plants grown in them. We considered we would escape this latter drawback by appropriating part of a pit to Strawberries solely, and it is to a simple fact connected with it that we wish to allude. The bed in the pit was chiefly rather dry soil, and we raised a temporary stage with boards from 20 to 24 inches above this floor, the stage sloping the same as the glass, so that each row should have all the light possible. No plants could have looked better, or shown bloom more strongly, but both foliage and flower trusses became rather longer than usual and almost touched the glass. The consequence was, partly from the moisture in the pit, partly from the glass condensing the vapour, even with the help of a little air on at night, that the foliage and flowers were often so wet in the morning that one might have washed his hands amongst them, and on a dull day they would scarcely be dry before night. We tried covering the glass at night to arrest the radiation of heat from the glass, and thus lessen its powers as a condenser of watery vapour; but even this was not quite effectual, the blooms were still too wet to allow of the process of fertilisation being thoroughly accomplished. We then took the plants and stage out, lowered the latter 6 inches, and used a thicker covering at night, and since then the plants were dry in the morning with just a few dewdrops here and there on the points of the leaves, and the setting and swelling proceeded rapidly. Now, this simple fact shows—first, that in confined pits it is possible to have Strawberry plants too near the glass; and, secondly, that it is very easy, even with hot-water piping, to have too much atmospheric moisture. We could have dissipated the latter by giving more air and more heat, but we could not well give more heat under the circumstances. The lowering of the plants and the covering of the glass in cold nights proved an effectual remedy. The points of the foliage were not so much cooled when farther removed from the clear radiating body of glass, and the condensation of moisture was next to entirely neutralised by the covering of the glass. Every leaf hanging with dewdrops in the morning told the tale, that the points of these leaves became colder than the surrounding air before they could condense the vapour contained in it. When Strawberries are grown in houses of even moderate size, it is very rarely that they will suffer from excess of condensed moisture.

ORNAMENTAL DEPARTMENT.

For general work, see previous weeks' notices. We will to-day confine ourselves to a few words on *hardening-off bedding plants*, merely premising that we have had much to do still with propagating, sowing, and pricking-off seedlings. Many small things, as *Lobelias*, we prick-out in little bunches until they become larger, as it is advisable not to have them long in their seed pots. We mentioned last week having our earth and turf pits made ready, forking them over, &c. The sharp frost of several mornings did good to the soil, but prevented us using it until it should be rather well warmed. Before this is printed, if the weather be at all favourable, we shall have a great many plants under protection out of doors, and thus have something like moving room in our houses. *Calceolarias*

we shall plant separately in these preparatory beds, raising them out of the beds in which they were inserted as cuttings last October. Verbenas we often plant separately, and at other times we turn out small cutting pots. A considerable amount of moving is thus incurred, but it cannot be helped so long as every glass structure has to serve so many purposes. Besides saving pots (as the same small pots will be filled and emptied a number of times the same spring) we believe that on the whole the temporary planting-out saves labour, and that the plants do better than when left standing under some kind of protection. Thus, in the case of *Calceolarias*, after planting-out now, they rarely are ever watered again before they are taken to the beds.

As we know that numbers of our readers are now at a loss for room, we shall shortly tell how we manage, and not to be intricate will take *Scarlet Pelargoniums*. These in general are struck and kept in small wooden boxes, merely nailed together, and about 3½ inches deep. Some of these we manage to put into 60-sized pots, and, when established, we turn them back into the boxes, so that each will come out again with a ball, and these are protected with mats, branches, &c. Lots more, the pots getting full of roots, we have turned out into earth pits. The plants are well watered before they are turned out of the pots. They are then set with their balls along a little trench, the balls but a short distance apart, and a little rather rough rich soil, shaken among them from the spade, this soil consisting chiefly of leaf mould, old mushroom dung, and riddlings from beneath the potting bench. This is firmed round the balls with the hand, and then the natural soil placed, and another trench cut out, just giving the plants room enough to grow slowly for six weeks or so to come. We gain by not watering the soil, as that is already moist enough, and if the tops of the plants can be kept dry, they will root very quickly in the new material, and at lifting time the roots will be protruding into it, and the only care is not to let any of the roots drop off when lifting. Between this mode and turning out from hard balls in pots there is no comparison as to the plants doing well. Of course it can only be largely practised when the flower beds are at no great distance. These plants will rarely show their moving, when transplanted. The last potted must in general go into the beds from the pots. A great proportion of our plants, however, are never placed in a pot. Great numbers were taken from these cutting boxes and planted-out separately the same as the above, only the roots of each are kept pretty close at home, and the fresh rough soil placed along the trench. These will ultimately do quite as well as those that were potted, but in hot weather, after final planting, they will be a little distressed with bright sun for a few days, so that they are better suited for places that do not come prominently into view immediately after planting. Except for showing this little distress at first, this simple plan answers so well as to leave nothing to be desired. We may also mention that when we have three or four neat little plants in a 60-sized pot, and there is scarcely time to let them become established separately, we often turn out the ball as above with fresh material round it, and at planting time, from the lot of fresh fibres, we can easily break it into three or four good pieces, and each will be much better than if it stood with its neighbours in the pot.

Now, as to *protection*, we use everything—evergreen branches, straw hurdles, hurdles with green branches drawn through them, mats stretched tight, &c., but of all things we prefer old sashes if they can be had, as they can be duffed if necessary, and next to these unbleached calico. We, on the whole, prefer the latter when we can obtain it, as it gives so little trouble, keeps the plants rather dry when it is strained tight, lets enough of light through for good sturdy growth, and keeps enough of the fierce rays of the sun out to make anything like shading unnecessary. In very severe weather we have placed a little straw or evergreen boughs over it at night. It is best when 2 yards wide, and in proportion to the length of the earth pit, handy lengths may be from 6 to 10 or more yards, each end being fastened to a pole for rolling it on, and for drawing it tight. Cross pieces of wood, as stout flower stakes, are laid across the pit some 4 feet apart, to prevent the cloth bagging, and besides the poles at the ends, a string is fastened on each side at every 4 feet or so, which when fastened to a pin keeps the cloth tight, and thus heavy rains are mostly thrown off. We have had plants thriving beautifully under such protection, and scarcely moved for a month or six weeks, except holding it up two or three times in very bright days to syringe

the plants. Often the plants were never watered from the time they were turned into the bed until they were taken to the flower garden. Nothing can be more suitable for the enthusiastic amateur. If confined solely to this spring work, and put away dry, the same cloth will last many years. We prefer it unbleached, not too strong, and without glazing or waterproofing.—R. F.

COVENT GARDEN MARKET.—APRIL 1.

A slight improvement is observable here, and, notwithstanding the heavy supply of some articles, prices have been maintained. Among foreign produce we have again had some fine specimens of Cayenne Pine from St. Michael's. Good Potatoes also meet with a ready sale at a slight advance upon former quotations.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....½ sieve	8	0	to	5	Melons.....each	0	0	to	0
Apricots.....doz.	0	0	0	0	Nectarines.....doz.	0	0	0	0
Cherries.....lb.	0	0	0	0	Oranges.....100	3	0	7	3
Chestnuts.....bush.	10	0	16	0	Peaches.....doz.	0	0	0	0
Currants.....½ sieve	0	0	0	0	Pears (dessert) ..doz.	4	0	8	0
Black.....do.	0	0	0	0	Pine Apples.....lb.	8	0	12	0
Figs.....doz.	0	0	0	0	Plums.....½ sieve	0	0	0	0
Filberts.....lb.	1	0	0	0	Quinces.....doz.	0	0	0	0
Cobs.....lb.	1	0	0	0	Raspberries.....lb.	0	0	0	0
Gooseberries.....quart	0	0	0	0	Strawberries..per oz.	1	0	2	0
Grapes, Hothouse..lb.	12	0	20	0	Walnuts.....bush.	10	0	18	0
Lemons.....100	8	0	12	0	do.....per 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....doz.	3	0	to	4	Leeks.....bunch	0	3	to	0
Asparagus.....100	10	0	25	0	Lettuce....per score	1	0	1	6
Beans, Kidney.....100	1	6	0	0	Mushrooms.....pottle	1	0	2	0
Beet, Red.....doz.	2	0	3	0	Mustd. & Cress, pinnat	0	2	0	0
Broccoli.....bunch	0	6	1	6	Onions....per bushel	3	0	5	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsley.....per sieve	4	0	5	0
Cabbage.....doz.	1	0	1	6	Parsnips.....doz.	0	9	1	0
Capsicums.....100	0	0	0	0	Potatoes.....bushel	4	6	5	6
Carrots.....bunch	0	6	0	8	Kidney.....do.	4	0	6	0
Cauliflower.....doz.	3	0	6	0	Radishes doz. bunches	0	9	1	0
Celery.....bundle	1	6	2	0	Rhubarb.....bunch	4	1	6	0
Cucumbers.....each	0	2	0	0	Savoy.....doz.	1	0	2	0
Endive.....doz.	1	0	0	0	Sea-kale.....basket	1	0	2	0
Fennel.....bunch	0	3	0	0	Shallots.....lb.	0	8	0	3
Garlic.....lb.	0	8	0	0	Spinach.....bushel	2	0	4	0
Herbs.....bunch	0	3	0	0	Tomatoes....per doz.	0	0	0	0
Horse-radish..bundle	2	6	4	0	Turnips.....bunch	0	4	0	6

TRADE CATALOGUES RECEIVED.

Chivas & Weaver, Chester.—*Price List of Agricultural Seeds.*
 Ambroise Verschaffelt, Rue du Chaume, 50, Ghent, Belgium.
 —*Prix-Courant pour Printemps et Eté, 1868.*

TO CORRESPONDENTS.

.. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

Books (K. J.).—Hooker and Arnott's "British Flora," or Bentham's "Handbook of the British Flora." Each is arranged on the natural system. (*Man of Kent*).—The book you allude to is not the one we promised in the spring. It will be duly announced when ready in the Journal. (C. P. O.).—The price is 3s. 6d. You can have the book by sending your address and enclosing 3s. 6d. in postage stamps to the author—Mr. Grieve, Rev. E. K. Benyon's, Culford Hall, Bury St. Edmunds.

FOWLER'S GARDENERS' INSECTICIDE (A. A. S.).—Fowler's Gardeners' Insecticide may be had through any seedsman, or from Messrs. Fowler, North Street, Brighton.

PLANTING CHRISTMAS ROSE (*Idem*).—The best time to plant it is from July to October. It likes a moderately light soil enriched with leaf mould, and does best in well-drained ground, though it will thrive almost everywhere. It may be had of any florist or nurseryman, and through most seedsmen.

CAMELLIAS (*Et red*).—We do not wonder at your perplexity. The following selection is extracted from "The Gardener's Almanack" of this year. You can have it free by post from our office for thirteen postage stamps, and you will find in it similar selections of the principal flowers. Alba plena (Casoretti), Alba plena, both white; Archduchess Augusta, crimson; Anlica, blue-b, striped; Beauli, dark red; Belle Jeannette, red, white stripes; Caryophyllides, striped; Countess of Derby, white, rosy stripe; Countess of Orkney, white, red stripes; Duchess of Buccleuch, pink; Eximia, bright red; Henri Pavre, light pink; Jardi d'Ilver, rose; La Reine, flesh colour; Lavinia Magde, striped; Mathotiana, crimson; Monarch, rosy scarlet; Mrs. Abby Wilder, creamy white; Princess Bacchiotti, dark crimson; Saccosina nova, rose; Storyii, striped; Valtevarado, deep pink.

CURRIERS' REFUSE (*Idem*).—If merely scraps of leather, it might be applied to your Vine border on the same principle that woollen rags are

applied to Hops. They decompose slowly, and do not induce over-luxuriance.

DIGGING UP POTATOES (*Lili*).—So soon as the Potatoes have attained their full size, although the stems and most of the leaves remain green, there is no loss either in weight or quality. You must buy plants of the Primulas you mention, and ripen seeds for yourself.

MR. EDWARD TUCKER (*E. R.*).—We have few farther particulars of him. He was in his fifty-ninth year, and died at his house in Cecil Square, Margate. He was born at Stodmarsh, in the Isle of Thanet.

INSECTS ON PEACH TREES (*J. B. L.*).—There were no insects in your letter.

PEAS (*R. Nash*).—The earliness has been fully tested by the Fruit Committee of the Royal Horticultural Society. We do not know any one who gives cuttings.

APPLYING GUANO TO ROSES (*C. F.*).—"March is not a good month for applying ammoniacal manures. If guano be put on now it must be raked in. It is difficult to say what quantity of guano each Rose would require. The quantity depends on the quality and condition of the ground. Moreover, some Roses, even in the same family, require different quantities. I advise you to put one handful of Peruvian guano into an ordinary-sized watering pot (the size of a stable bucket), and after stirring well to pour the liquid over the surface as far as the roots may be supposed to reach. Guano in this form may be advantageously applied after the first series of flowers is over. Liquid manure much reduced with water is also a good application."—*W. F. RADCLIFFE.*

HEATING A SMALL HOUSE (*Joseph Mark*).—If you can employ gas have one of Shrewsbury's heating apparatuses. If you write to him—"Mr Shrewsbury, Ironmonger, Lower Norwood, Surrey," stating the size of your house, he would tell you what would suit you. Hay's stove cannot now be obtained.

HEATING A SMALL SPAN-ROOFED CUCUMBER HOUSE (*Willie*).—In such a house, 20 feet by 8, you will require two 4-inch pipes for bottom heat, and three pipes, or 60 feet, for top heat, and troughs on the latter to be used when moisture in the atmosphere is wanted. You say nothing as to how your house is to be arranged, whether all the width is to be a bed, or whether you mean to have a path in it. In either case the mode described to a correspondent lately would meet your case. If you give us more particulars we may advise more definitely.

PRUNING ORCHARD HOUSE TREES—THINNING FRUIT BUDS OF PEACH TREES (*H. M.*).—As your trees were pruned before you received them, and prepared for fruiting, we should think that they want no pruning-back now, as it would much weaken them. In thinning fruit buds of Peach trees when too numerous, it is well to leave the wood buds to encourage growth. These can be thinned when grown an inch or more, doing that gradually, and leaving plenty for next year's crop.

VINES MILDEWED (*G. E.*).—We have no doubt that the tank in the centre of the house, merely covered with boards, having 2-inch spaces between them, is the cause of the mildew. Much vapour would rise from the tank when the house was warm, and a heavy rain would also greatly cool the house. We presume that the eight openings for ventilation are at the top of the house, and that you have other ventilation at the sides, otherwise we should judge there was not enough of ventilation. We should certainly cover the tank closely by putting the boards close together, and even then would be disposed to cover with a couple of inches of concrete, and place some fine gravel on the top, and fixed in the concrete, for a path.

LAWN MOWER KNIVES NOT CUTTING (*Rector*).—If the knives of a lawn mower are chipped with stones, the best plan to adopt is to have the knives replaced by the maker, as they could not be ground to take out the chipped parts well. When the knives merely get blunt from use put a little emery dust on them and turn them against the plate in the reverse way.

GROWING MELONS AND CUCUMBERS IN A PIT WITH A FLUE-HEATED CHAMBER (*Idem*).—In your pit with a chamber heated by a flue, the fire in the flue will be of great use for Cucumbers and Melons until the end of June, and even after that in cold dull weather for keeping the plants healthy. There should also be openings from the chamber to let the heat into the atmosphere of the pit in cold dull weather. You had better grow Cucumbers at one end, and Melons at the other. A good average heat would be from 65 to 68 or 70 at night, allowing a good rise from sunshine.

ERECTING AND HEATING PITS (*J. D.*).—There will be no difficulty in your proposed arrangement as to the pits, heating, &c., and the position as to the back wall is entirely one of convenience and of outlay. By using the stone wall for the back of the pits you save the expense of building a wall; but you must do all the necessary work from the front of the pit, either by tilting the lights up or taking them off; and for many purposes this can be easily done. By building a fresh wall for the back of the pits, and leaving a pathway between that and the present stone wall, you can examine the inside of the pits from back and front, and do most of the work by sliding the sashes up and down. Were we studying economy and convenience we would make a low house against the stone wall, so that we could walk inside, and have a fixed roof.

KEEPING A STREAM CLEAR (*Neptune*).—The pebbling of the bottom of the stream, or concreting it, and then pebbling it, would help to keep the water clean, and after the lime had lost its acidity would not harm the fish. If this cannot be carried against the gravelling or pebbling the bottom must then be resorted to. Besides the fish, a few water fowl would help to clear the brick walls of the green slime. If that is not effectual the walls might be cemented; but then the fish would have to be removed. We have considerable trust in the pebbles, the fish, fowls, and lime. We have known of several cases where cleaning out the bottom of a stream that did not have a hard bottom has been followed by similar results, as many impurities previously buried for years obtained more free access to the water. The removing of the mud, in fact, made the water turbid for a year or two afterwards. As respects the Willow slips, you had better strike them in common or damp ground, and when established plant in your rockwork mound, so that the bulk of the roots shall be in water. The roots will reach the water by themselves. Nothing strikes more readily than the Willow.

GROWING MUSCAT AND HAMBURGH GRAPES IN THE SAME HOUSE (*W. S., a Constant Reader*).—You may grow Muscat and Hamburgh Grapes

in the same house very well by planting the Muscat Vines at the warmest end where the heating apparatus ends. Had we two distinct houses, however, to plant in, we would much prefer to have a house for each. We do not know ten distinct Muscats; but you can, if variety is a great object, grow Frontignans in the Muscat house. The Muscats we recommend are Muscat of Alexandria, Bowood Muscat, Canon Hall Muscat, and one plant of Black Muscat of Alexandria. For Hamburghs—the common Black Hamburgh, Victoria Hamburgh, Dutch Hamburgh, and Champion Hamburgh. We would not retransplant the Camellias until growth had ceased and the buds were formed at the points of the shoots.

CERASTIUM TOMENTOSUM AND GNAPHALIUM LANATUM CUTTINGS (*Man of Kent*).—When rooted and hardened-off the cuttings may be pricked-off in a sheltered border, moving them with a ball to their final place in the flower beds in May; or, if the plants are now well hardened you may at once plant them out where they are to remain. *Cerastium tomentosum* is perfectly hardy, but is somewhat liable to die off in winter on heavy soil. *Gnaphalium lanatum* is also hardy, but requires gravelly or well-drained light soil, otherwise it does not survive the winter.

TREATMENT OF VIOLA CORNETA AND V. LUTEA SEEDLINGS (*Idem*).—When sufficiently large to handle they should be pricked-off in pans of light soil, enriched by the addition of one-third leaf mould or very rotten manure. Prick them off about 1 inch apart, keep them moderately moist until established, then water copiously, and keep them near the glass in a cold pit or frame, giving them an abundance of air, and plant out in May. If you write to Mr. Richards, Assistant Secretary, Royal Horticultural Society, South Kensington, he will send you full particulars.

VERBENA VESUVIENSIS (*Idem*).—The flower is orange scarlet, with crimson centre and white eye; fine truss and good habit.

RED SPIDER IN SOIL OF VINE POT (*J. J. H.*).—You may free your soil of the red spider by watering it with guano water, 1 oz. being dissolved in a gallon of rain water, and applied at every alternate watering; or you may place a week of soot in a tub and pour over it thirty gallons of water, stirring well up, and water the plant with it. Both liquids will benefit the Vine. The surface of the soil in the pot may be made quite black with soot. It will act as a manure. Soot is the best destroyer of red spider known.

PROPAGATING CALLISTEMON LANCEOLATUS (*A Sussex Ficar*).—Cuttings should be taken of the points of the shoots when the terminal bud is formed, and before the wood has become hard; but it is necessary that the wood be rather firm, or in the condition known to gardeners as half ripe. The cuttings may be from 3 to 4 inches in length, and should be cut across below a leaf, removing the leaf, and from one-half or two-thirds the length of the cutting upwards the leaves should all be removed. Pots 4 inches in diameter will be sufficiently large for the cuttings if these are not large, or 6-inch pots may be used if the cuttings are strong. The pots should be half filled with crocks, and over these should be placed a thin layer of moss or turfy peat, filling to within an inch of the rim of the pot with a compost of good fibrous sandy peat one-third, and two-thirds silver sand, and the remainder of the space with silver sand. Each pot thus prepared should be placed inside of a pot a size larger, or large enough to admit the cutting pot, and when raised so that both rims are on the same level, there will be an interval between the two pots. The cutting pot is to be raised to the same level as the outer pot by placing it upon small crocks. Half fill the interval between the two with small crocks, place a layer of moss above these, and bring level to the rim of the other pot with silver sand. The pot should then be watered thoroughly with rain water, and be allowed to drain well before the cuttings are inserted. They should be put in round the sides of the pot, and close to but not touching each other. A gentle watering should then be given, and after the cuttings have been allowed to dry plunge the pots in a mild and sweet bath of from 65° to 70°. Cover them with a bell-glass resting on the sand between the pots. Afford shade from bright sun, and attend to watering, so as to secure uniform moisture, for if the cuttings ever suffer from the want of it they never succeed. The bell-glass should be taken off every day and wiped dry, returning or replacing it immediately. When they are rooted the bell-glass should be gradually taken off, so as to harden them off before being potted. If you have tried this plan and failed, take cuttings of the young shoots when they are 3 inches long, taking them off close to the old wood, and with a small heel of the older wood; make it smooth with a sharp knife, remove the lower leaves, insert the cuttings in pots prepared as above, and follow the same mode of treatment.

GRAFTING APPLE TREES (*C. P. O.*).—You do not say how thick the stem of your seedling Apple is, nor how many branches it has. If it is not thicker than your thumb we would cut it down to within 6 inches of the ground, and there graft it; but if the stem is as thick as your wrist, and the branches forming the head as thick as a finger, we would cut all but three away. Cut them in to within 6 inches of the stem, and in each insert a graft. The best mode of grafting will be whip grafting, whether you graft upon the stem or side branches. If the side branches are thick, crown-graft, putting two grafts in each branch. You will find full particulars as to grafting in the "Science and Practice of Gardening," which you can have free by post from our office for 2s. 18d.

FERTILISING PRIMULA FLOWERS (*Primula*).—The process is to take the pollen from the anthers and apply it to the stigmas of the flowers. A camel's-hair pencil is best for the purpose. The pollen should be taken from the largest and best-coloured flowers, and applied to the stigmas of those having large blooms, good in colour and form. The operation should be performed in the early part of a fine day, and a few days after the flowers are fully expanded.

VINE EATEN BY RATS (*Constant Reader*).—The Vine rather more than half eaten through by rats will not only live but produce good crops. We would not cut it down. If a shoot come from below the eaten part allow it to grow, giving it every encouragement, and when it has reached the rafter train it up by the side of the older rod, allowing it to make as much growth as it will this season. The old cane after fruiting may be cut down to the young cane, which will, of course, be substituted for it, and you will not lose the crop. If no shoot arise from the stem below the eaten part, be satisfied with the Vine as it is.

NEPETA NEPETELLA FROM SEED (*Celia*).—It may be raised from seed, but plants so raised do not flower well the first year; for them to do so the seed should be sown early and the plants forwarded in heat. Plants from cuttings are better, being more free-flowering, and more compact in habit. It is a good, old, free-flowering plant, and continues a long time

in bloom, being superior to *Viola cornuta* in this respect; but is inferior to the *Lobelia speciosa*, and not nearly so effective in colour.

MYOSOTIS AZORICA (Idem).—Plants from seed sown now will not flower until autumn, and even then very sparingly if at all; but they will by that time be good plants for planting out, and will make a fine display early the following summer. This *Myosotis* is not suitable for summer bedding. We have it for flowering early in summer or late in spring, and it is very fine in May, but it will not endure sun or drought.

OLD CHERRY TREES DECAYING (J. D. Ireland).—Your proposed covering of the excrescences on the branches and stem with clay will not prevent further decay of the trees. It would do quite as much harm as good. The application of a good dressing of manure would be of greater service to the trees by invigorating the roots, than anything applied to the branches. The evil is in the roots, and your best course will be to remove the trees when they cease to be productive.

STOPPING VINE LATERALS (J. Subscriber).—We would not stop the laterals as soon as they appear, but allow those at the base to grow until they had made six leaves, then take out their points. We would thus treat all laterals that came on the stem or cane up to 3 feet; all laterals in the next foot of height we would allow to grow until they had made five leaves and then stop them. From 4 feet up to 5 feet we would stop at the fourth leaf; between 5 feet and 6 feet at the third leaf; and between 6 feet and 7 feet at the second leaf. All over 7 feet we should keep closely pinched, in the first instance at the first leaf, and stop all sub-laterals at the first joint, and this repeatedly as they were produced. We thus have as good eyes and as strong wood at the base as at the upper end of the cane.

CUTTING GRASS (E. J.).—By cutting the grass well into the bottom we intended it to be understood that grass at the first cutting should be cut very close to the ground.

SHADING A GREENHOUSE (Idem).—For flowering plants shade, but for growing plants shading will not be required except when they are fresh potted, or are plants requiring shade—such as Ferns and Orchids. We do not recommend you to colour the glass so as to render it opaque, and we would advise a shade of tiffany. It will be required quite as much for the roof as the front of the house, and would be best outside, attached to a roller, and run up and down as required. The plants cannot be kept too near the glass if they do not touch it.

PROPAGATING POLYANTHUS, PRIMROSES, AND DAISIES (Idem).—The best time to propagate these plants is when the bloom is over. Plant the divisions on an east border or other situation shaded from the midday sun. They should be shaded and well watered until established.

TREATMENT OF PERILLA, ASTER, STOCK, AND PHLOX SEEDLINGS (Idem).—They may be kept in the greenhouse, after they are pricked off, until bedding-out time, but they should be well hardened-off by affording them an abundance of air, and would be all the better of fall exposure in May, placing them in a sheltered situation, and affording protection from frost, should it occur. If the plants are not further from the glass than 12 inches, they will do well, and if but 6 inches they could not be better placed. Indeed, they cannot be placed too near the glass.

TREATMENT OF BULBS AFTER FLOWERING (H. B.).—If the Hyacinths and Tulips have been forced early there is no mode of treatment by which they can be made to flower well after the first year; but if merely brought on in a gentle heat they will flower well for years in the open ground, but are not equal to imported bulbs. When the flowering is past the bulbs should not be placed under the stage, or be planted in the open ground, but ought to have a light airy situation near the glass in a cool house or cold frame, giving them copious supplies of water until the foliage ceases growth, when watering should be discontinued gradually, and entirely left off by the time the foliage turns yellow. When the leaves are completely yellow the plants should be turned out of the pots, and if their roots are all gone shake away the soil, and place the bulbs on shelves in a cool airy shed to dry. When thoroughly dried remove the old roots, dead flower stems, and leaves, which, being mature, will part freely from the bulbs. Having removed the offsets from the bulbs, place them in layers in a box in dry silver sand, and keep them in a cool dry place until October, when they may be planted in the beds or borders of the garden. The Hyacinths should be planted with the crown of the bulbs from 1½ to 2 inches below the surface, and the Tulips about an inch. A well-drained light rich soil is most suitable, but any well-drained and not very adhesive soil will grow them well. In November or early in December before severe weather, give a mulching of about 1 inch of half-rotten leaves, and this is all the attention our bulbs receive, and we always have a fine bloom in spring or early in summer. When the foliage decays we take up the bulbs, remove the offsets, and replant at once, after giving the ground a dressing 1 or 2 inches thick of equal parts of rotten cowdung and leaf mould. This should be well mixed with the soil, which is trenched to a depth of not less than 15 inches, but the deeper the better. We do not take the bulbs up oftener than every second year, and then we are obliged to do so on account of the offsets. Our soil is light loam resting on gravel. It is never wet. There is no necessity to take the bulbs up and dry them, as the summer plants can be planted between the lines of bulbs. In heavy soils, however, we would take the bulbs up annually, and store them as already described, replanting in autumn

when the summer plants are cleared off, and after the ground has been well prepared for the reception of the bulbs, without which it is needless to plant them. As to the offsets, we plant them in beds in lines 6 inches apart, and 3 inches apart in the line, drawing a shallow drill, and putting them in the same manner as Shallots, then covering with about an inch of fine soil. We do not keep the offsets an hour longer out of the ground than can be helped. A mulching of half-rotten leaves 1½ spread over the offset beds in autumn before severe weather sets in, and the ground between the lines is lightly stirred in spring. After two seasons' growth we have fine flowering bulbs for planting in beds and borders. We have often had Hyacinth bulbs home-grown weighing 4 and 6 ozs., and a few even 8 ozs. weight.

PROPAGATING PANSIES (Flora).—We would advise your procuring a few good plants of the kinds you require, and at once planting them out 1 foot apart. Layer the shoots by pegging them down, and by these means you will obtain strong plants, especially if your soil is light and you place fresh cow dung around the base of each plant. You will have numerous cuttings by July, during which month you may take off all the points of the growing shoots, and especially those coming from the collar of the plant. Three inches will be sufficiently long. The cuttings should be cut below a joint, and the leaves removed from all but the upper third of the cuttings. They should be inserted in a compost of equal parts of loam, leaf mould, and silver or sharp sand. A rather shady situation should be chosen, and the cuttings, after insertion 1½ inch apart every way, may have a good watering, and should be covered with a hand-glass or frame, the lights being kept close and shaded from bright sun. No pains should be spared in attending to watering and shading, for if these be neglected, and the cuttings flag, their rooting will be retarded, if they do not fail altogether. A little air may be given in the early part of the day to dry up any accumulation of damp, and when the cuttings become rooted, air should by degrees be freely admitted; when well rooted they may be fully exposed.

PERILLA NANKINENSIS for a LOW EDGING (Idem).—The best way to form a neat edging of Perilla is to plant a double line of it for a 2-foot edging, placing the plants 1 foot apart every way, and pegging them down after they have become well established. For pegging the shoots down we employ bamboo, cut into 4-inch lengths, avoiding the joints. We split the lengths into small pieces about the thickness of match wood, and throw them into water to soak, which makes them very pliable. We peg down the shoots with these bent between the finger and thumb, and thrust into the ground. When bent they look like hair pins, and are the cheapest and best pegs we ever saw or used. We continue the pegging until the plants meet, and we then pinch back the small shoots, and all shoots are kept pinched to one joint, or two at the most. The first stopping takes place when the shoots are about 6 inches long and after pegging is discontinued. If you require an edging of 1-foot width one row of plants will be sufficient, putting the plants in from 9 inches to a foot apart.

SAPONARIA CALABRICA (Idem).—This splendid annual makes a charming bed, line, or edging if sown now. It should be sown where it is to remain; transplanting it is not desirable.

RASPBERRIES AND ASPARAGUS in a DAMP SITUATION (S. S.).—Raspberries thrive best in well-drained and moderately light soil; but your soil and situation will suit both if water does not lodge in the subsoil. If the soil is not light and well stirred to a depth of 2 feet it must be made so for the growth of Asparagus.

TURNING OUT BEDDING PLANTS INTO FRAMES (A. B.).—You will be doing well to turn your plants out of the pots, having previously put 6 inches of good turfy loam and leaf mould in the frame, and in this plant without disturbing the ball. The plants will make a better growth, and may by careful removal experience no greater check upon transplanting than if they were planted out from the pots; in fact, the plants will grow better and cover the beds much sooner. The plan is not new, having been several times recommended in the Journal. Expose the plants fully, and have them thoroughly hardened-off prior to planting out. The plants could not have a better position than one fully exposed to the sun.

NAMES OF PLANTS (J. G.).—*Asplenium chlorneum*. (Mars.)—*Scelaginella Martensii*; *Hepatica triloba*. (Falc. Hoff.)—1, *Lonicera angustifolia*; 2, *Pittosporum glabratum*. (R. Kemp.)—4, *Primula farinosa*, var.; 2, *Probably Pulmonaria officinalis*. (J. Wright.)—It is impossible to name seedling plants before they are more advanced without more definite information. We can find nothing resembling the specimen sent from North America. (S.)—1, *Adiantum tenerum*; 2, also *A. tenerum*; 3, *Pteris serrulata*; 4, *Pteris crenulata*; 5, *Pellaea rotundifolia*; 6, *Polypodium subauriculatum*; 7, *Adiantum curvatum*; 8, *Adiantum (Dore)* Bellangeri. (M. A.). 1, (?) 2, *Anemone officinalis*; 3, *Erica vagans*. (C. P.).—Garden Hyacinth and *Erica vagans*. (W. F. B.).—*Iberis saxatilis*. (Miss C.).—Garden Anemone. (A. B.).—1, *Gaultheria odorata*; 2, *Ajuga reptans*, garden variety; 3, *Tetranthera pilosa*; 4, *Diosma*, but which we cannot tell without flowers. (W. G.).—1, *Edwardia microphylla*; 2, *Pittosporum tenuifolium*. (C. F.).—1, *Asphodelus ramosus*; 2, *Eranthemum crenulatum*, variety; 3, *Prunus (Cerasus) Caproniana*; 4, *Eranthemum leuconeuron*; 5, *Bryophyllum calycinum*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending March 31st.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 25	30.661	30.030	50	33	45	44	N.W.	.06	Fine; clear and fine; fine; very dark at night.
Thurs. 26	29.921	29.897	57	40	45	41	N.W.	.00	Dull, slight showers; densely overcast; fine.
Fri. . . 27	30.219	29.768	59	36	41	38	N.W.	.00	Clear and fine; fine; clear and fine.
Sat. . . 28	30.493	30.361	51	27	47	44	N.E.	.00	Overcast; cloudy and overcast; fine.
Sun... 29	30.448	30.332	52	23	47	45	N.E.	.00	Overcast; fine, slightly overcast; clear and fine.
Mon... 30	30.530	30.397	51	24	45	44	E.	.00	Densely overcast; clear and fine; fine, starlight.
Tues. . 31	30.357	30.290	60	31	45	44	S.W.	.00	Hazy and overcast; fine; clear and fine.
Mean	30.290	30.153	54.71	30.57	45.00	43.29	..	0.06	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY EXHIBITIONS IN GENERAL.

CLASSIFICATION OF GAME FOWLS.

The best time for holding poultry exhibitions in summer is in the last ten days of June and in the month of July, as being just after the breeding season, which ends at midsummer, and before the moulting season, which often begins in August, though September and October are the regular moulting months, and all healthy poultry should be in full feather by November, or the first week in December. Summer exhibitions are, however, often injurious to very young poultry, which do not stand the removal or the penning at all well.

For the winter exhibitions the best time is December or November, but the week before Christmas is, perhaps, the very best time, as being well after the moulting season, and just before the breeding season, which should commence at Christmas. Fowls are, however, often more or less out of feather from July until December, a period of four months, and the breeding season lasts, properly speaking, from Christmas until midsummer, a period of six months, so that only July and December are thus left as the most proper months for holding exhibitions.

As to week days, Tuesdays, Wednesdays, Thursdays, and Fridays are the best days, leaving Monday for receiving, and Saturday for dispatching the birds again.

No exhibition should last for more than four days at the longest. For the two-day exhibitions, Wednesdays and Thursdays are the best days, as being in the middle of the week.

Exhibitions, however, cannot all take place at the same time, of course, and in the choice of time more regard is paid to local circumstances than to the reasons I have given, as, for instance, agricultural exhibitions, floral shows, horse or cattle fairs, market days, and similar gatherings, advantage of which is taken to hold a poultry show at the same time. August has always been the favourite month for summer exhibitions.

At exhibitions held in September and October the birds are displayed to great disadvantage, as in these two months adult birds, at all events, are most out of feather and never look well. August is the harvest month, and if this has anything to do with exhibitions, the harvest is in most parts of England over by September in ordinary years.

Yorkshire and Lancashire have always been the two great poultry exhibition counties; Yorkshire more especially so, as being the largest agricultural county in England. There are more poultry exhibitions in Yorkshire and Lancashire than in all the rest of England together, and I have always thought breeders in these two counties take more pride in exhibiting their poultry. North Warwickshire, perhaps, contains more Game fowls than any district in England, especially of the willow-legged, red-eyed, Black-breasted Reds; and Birmingham contains more Game fowls, especially Brown Reds, than any other town, though, I believe, the Manchester Brown Reds are superior in quality and hardness to those of Birmingham in general.

Poultry pens are, of course, hired by the committees of exhibitions, and some insist that the pens should be fitted with moveable perches, while others say that pens are better without perches. The pens should not be placed too close together, in the Game classes at any rate, as if not fitted with projecting side boards the Game cocks can reach out and get hold of each other's heads, as mine did in 1858, at the Crystal Palace Winter Show, much to their disfigurement.

Judges should, of course, be permitted to take the birds out of the pens for the purpose of handling them in judging, which some committees, I have heard, have objected to, saying it ruffles the feathers; but this no good handler would ever do, and the Game birds must necessarily be handled in judging. The pens should be large and lofty enough to contain comfortably a cock and two hens of the largest sorts of poultry.

THE BEST CLASSIFICATION OF GAME FOWLS FOR THE MIDDLE-SIZED EXHIBITIONS.

CLASS 1.—ORIGINAL-COLOURED AND OTHER REDS.

1, Brown Reds; 2, Black-breasted Reds. Both cup sorts and the most numerous sorts of all Game fowls.

CLASS 2.—DARK-TAILED SORTS, NOT ORIGINAL.

1, Duckwings and other Light Greys and Birehens; 2, Dark Greys and Dark Birehens; 3, Blacks and Brassy-winged Blacks.

CLASS 3.—SORTS WITH THE LIGHT TAILS.

1, Piles or Pieds; 2, Whites; 3, Red Duns; 4, Blue Duns. The

Dun sorts should be classed with the Piles and Whites, and not with the Duckwings as is generally done.

CLASS 4.—FULL-GROWN COCKS OF EACH COLOUR.

Best full-grown cocks of each colour. This is a popular class.

A STILL BETTER CLASSIFICATION, PERHAPS.

CLASS 1.—SORTS WITH THE DARK HENS.

1, Brown Reds (cup birds); 2, Dark Greys and Dark Birehens; 3, Blacks and Brassy-winged Blacks. This separates the Brown Reds and the Black-breasted Reds.

CLASS 2.—SORTS WITH THE FAWN-BREASTED HENS.

1, Black-breasted Reds (cup birds). Most numerous sort of all. 2, Duckwings. Very popular and numerous.

CLASS 3.—SORTS WITH THE LIGHT TAILS.

As in the above list. The Piles very popular and plentiful.

CLASS 4.—SINGLE COCKS.

As in the above list.—NEWMARKET.

(To be continued.)

BRAHMA POOTRAS AND DORKINGS.

I JUST write a line to correct the misapprehension that may arise in your readers' minds, through the heading which you have attached at page 246 to the communication made by me with reference to the extraordinary laying of one of my Brahma pullets, &c. The mixed brood I refer to as having been hatched on the 10th of March last were not cross-bred, as the heading would imply, but by mixed I simply meant that I made up a sitting of part pure Dorkings and part pure Brahmas' eggs, and of the chickens hatched from those eggs the Dorking pullets began to lay precisely at five months old, and the Brahma pullets not until two or three weeks later—a rule that I find generally observed with my birds, although in the answer you gave to your correspondent's question last week, you stated that the reverse is the case.

The pullet has laid every day since the 23rd ult. (one egg, however, being soft), and appears likely to continue doing so until further notice.—R. W. BEACHEY.

MANAGEMENT OF GEESSE.

ONE of my Embden Geese laid an egg weighing 11 ozs. I should advise "T. M. L." to leave the eggs in the nest, and let the Goose amuse herself just as she pleases; mine are so proud of their eggs, and go on the nest every day, even when they do not lay. The eggs are kept warmer than when they are removed. As the time of incubation draws near, the Geese cover the eggs very carefully with feathers and down, and they look snug and promising.

I like them to sit in an outhouse, and not out of doors. This is easily managed by shutting them in for a few nights previous to laying; and let the nests be in a secluded place.—L. B.

[The above reminds us of what was recently published in the *Norfolk Chronicle*.

"Norfolk has long enjoyed a most extensive and unrivalled celebrity for her poultry, and especially for her Turkeys and Geese. The number of these delicious birds sent from the county throughout the year, and particularly at Christmas time, is incredible. Besides those reared in our farmyards we have Geese produced by wholesale just beyond Magdalen Gates, by Mr. Bagshaw, who has a complete monopoly of the trade, not having any known competitor in the country; and some statistics respecting the rearing of these birds, and of their disposal, will probably not be uninteresting.

"Formerly Mr. Bagshaw reared a large number of Turkeys, but the demand for Geese so increased that he confined his Christmas business to the latter birds, still, however, continuing a general trade throughout the year. In the course of twelve months he produces from 60,000 to 70,000 fowls, of which about 30,000 are Ducks, principally of the Norfolk breed. About the last week in October the "baying-up" is the first preparation for the Christmas sale, more than one-half of the number required being obtained from Holland, and the remainder from various parts of this country. The fattening commences about the middle of November, and the largest number fatted at one time is 12,000—the number fatted this winter. As we have said, this business is carried on just beyond Magdalen Gates.

"The feed on which the fowls are fatted is barleymeal and brewers' grains, the former being ground by Mr. Bagshaw himself, so that he may not be exposed to the adulteration which

this commodity frequently undergoes; and the quantity of food required is about ninety coombs of barleymeal and sixty coombs of grains daily. The manure from such an immense number of fowls, fed upon such a description of food, is very valuable, and frequent applications for the sale of it are made; but as Mr. Bagshaw holds a farm close by his poultry yard he prefers to make use of it himself. It takes about six days to make preparations for the market, and about one hundred dressers are employed in the work, but as the birds are not drawn before they are sent to market, the giblets are bought with them. Of those killed for Christmas, some 4000 are sent to the goose clubs, and the rest are forwarded to the markets at Leadenhall and Newgate, where they are sold on commission. During the Christmas week no less than from seventy to eighty tons weight were sent away from Norwich by rail, the Geese averaging in weight from 9 to 16 lbs.]"

SELLING BOILED EGGS.

I DEB to ask your advice upon the following case. A person advertised in your paper some fowls for sale, first prize Birmingham. I wrote about that pen, and he said in answer that he had concluded to keep them, but if I wanted a sitting of eggs I should have an honest one, on the receipt of a post-office order for 12s.; and about ten days ago I received a note from the person saying that the birds of the first-prize pen were now laying, and a sitting of eggs were at my disposal, on the receipt of a post-office order. I accordingly sent one for that amount, and received a box containing thirteen eggs, one of which was quite cracked on one side, but dry, which excited my suspicion. When I broke it, you may imagine my surprise when I found it had been boiled quite hard. I broke two more and they were just the same. There are eight more looking just the same, and I have not the least doubt they have been boiled. What remedy have I? I withhold all names at present; but will give mine and his also, as I do not intend to be swindled in that way if I have a remedy.—J. L. L.

[Have the other eggs opened in the presence of a witness, and if they, or any of them, prove to have been boiled, apply to a magistrate for a warrant, and have the vendor apprehended and tried for the fraud. Since we wrote the above we are informed that the vendor returned the money, and stated, as is usual, that his man did it!—Eds.]

PACKING EGGS.

I saw a short time ago that you recommended bran as material for packing eggs in. I have been very unfortunate with eggs thus packed. Last year I purchased some Turkey eggs, they cost me about 14s., and I did not obtain a chick. I paid an extra shilling for packing, and the eggs were sent in bran, but although wrapped in paper were all lying against the lid, and five or six were smashed. The remainder were placed under a good sitter, but at the expiration of the time they all proved unproductive. There was no sign of a chick in any of them. I use moss when it can be had, and I find it answer very well. It wants drying previous to use.—L. B.

NOTES ON FANCY PIGEONS.—No. 10.

THE CARRIER.

THERE are by common consent of fanciers, and there have been for upwards of a hundred years, three varieties of Pigeons which stand higher than others in esteem, which have been cultivated with greater care, and in which certain properties have been raised to a higher standard. These are Almond Tumblers, Carriers, and Pouters. These birds have been treated in a similar way to florists' flowers. Now we know that the high-class fancy Pouter was derived from the common Pouter, and the Almond Tumbler from the common Tumbler; whence, then, must have come the fancy Carrier? Doubtless from the Horseman, a bird which now writers on Pigeons actually ignore. The Carrier came from the Horseman, not the Horseman from the Carrier, as the better comes by care and selection from the worse, just as the pansy came from the wild heartsease; though of course the worse will come from the better if there be a want of care, as the pansy will, if neglected, come back again—degenerate, in fact, to the wild heartsease.

There appears to have been, long before the English fancy Carrier, a breed of Pigeons which was useful, and therefore

bred in great numbers. These birds showed a great desire to return home, and would fly home great distances, and in days when travelling was slow a winged messenger was indeed valuable. It stands to reason that the birds that were quickest in flight and surest of reaching home would be most valued, and their form, colour, &c., would not be for a moment regarded.

There was, then, this class of useful Pigeon; useful, therefore valuable. Not a show bird—not a bird of points and properties, but of utility. Call the bird the Persian Pigeon, or the Turkish Pigeon, or the Scanderoon, or the Bagatin, or the Horseman; the bird is one and the same, perhaps some larger than others, but substantially the same. The bird was a bird of utility, and capable of being trained to greater utility, and naturally feather or shape, save as tending to utility, would be uncared for. The shape of these Pigeons was well suited to cleave the air; formed as we make the fastest boats, they were to other Pigeons—for example, the Hunt—what the University racing boat is to a barge. These Pigeons had also in common, notwithstanding differences of name, more or less of naked lump-like flesh round the eyes, and above and below the base of the beak. From these birds came, by care, and selection, and good judgment in matching, a florists' flower of Pigeons—the fancy English Carrier, just as in like manner came the Almond Tumbler and the English fancy Pouter.

One only objection is to be met—viz., that the best show Carriers are always black or dun, while Horsemen are of all colours. But this difficulty is answered thus: It is well known that some properties appear in excess attached to one particular colour, and that the best fancy birds of certain varieties of Pigeons are always of a certain colour—e.g., Fantails white, Dragons blue. The Carrier is the high-bred cultivated gentleman, the Horseman the useful labourer. As it is said to take three generations to breed a perfect gentleman, so it certainly takes several generations to breed a perfect Carrier. The Carrier has been a gentleman these 150 years probably, but he has refined and become a more perfect gentleman, just as a series of dukes have become in the same number of years. I look at a first-class Carrier and think, "Ah! your fine Eton and Christchurch, and good food, and good housing, and careful mating during the last 150 years have done wonders for you and your forefathers!" Then glancing at the shorter-necked, thicker-skulled Horseman I think, "You have not had such advantages, but you are the most useful fellow still."

I shall not go into the fancy points of the English Carrier, inasmuch as every Pigeon book gives them, but I will remark upon the bird generally. As the Pouter is the noblest-looking Pigeon that walks, so the Carrier is the most graceful; but to see well-bred Carriers to perfection you must not judge of them when in cages at an exhibition, for there they never look well; they stand at bay in a corner, and do not for one moment look at ease. But suppose you suddenly open a loft door, and there are a few Carriers within; they are bold enough not to fly, but unsociable enough to dislike and resent the intrusion, and stand on the peas giving a cross snort at you, and as they stand they look the very perfection of graceful strength. They remind me of the story of Queen Anne and her sculptor. Said the Queen, "You have made me in my statue look stern." "Madam," replied the sculptor, "God only can combine dignity and grace." Now, we may see the two combined in the Carrier. No wonder he has so long enjoyed the title, The King of Pigeons; no wonder an old fancier chopped off his head in royal fashion, and did not ignominiously wring his neck.

The colour of the Carrier in my opinion is best when black, and the blacker the better; then the statuesque look is more visible—that hard solid look which reminds one of stone. Unless I greatly mistake, the present show Carriers are many of them too small, just as we see too many show Game fowls erring in this matter of size. You want in the Carrier the appearance of strength, as well as grace, which size alone can give.

I hope that having now opened the subject of the Carrier eminent breeders of this bird will give us their experience, and do for it what has recently been done in these pages for the Pouter.—WILTSHIRE RECTOR.

P.S.—I cannot forbear expressing my gratification at the excellent articles which have appeared recently in this Journal on one branch of the fancy Pigeon subject, from the pen of Mr. Huie and others. The late Mr. Brent appealed again and again for fanciers to speak out, but in vain. Now, however, the publication of the work entitled "Pigeons" seems to have aroused our friends, and made them dip their pens in ink to a good purpose. "Pigeon-fancying," remarks Professor Huxley "is a great art and mystery," and I am sure it requires

very much taste and judgment. But there is another view of the pursuit which raises it greatly in value, and which was brought under my notice by reading the reports of the meeting of the British Association held last year at Dundee. One of those philosophers who are wise—no, no, who wish to be wise above what is written—was contending for half a dozen Adams and Eves to account for the different varieties of men—the black, the red, the white, &c., and was answered by a philosopher properly so called, who was a believer in his Bible, in this way—that the origin of the different races of men from one human pair was capable of proof by analogy as long as there were fancy Pigeons in the world, which we know all came from the Rock Dove. This good man and good philosopher was doubtless a Pigeon-fancier; all honour to him. Now there are no divergences, or differences, or diversities in the human family so great as those between the Shortfaced Kite Tumbler, black in colour and dumpy in shape, and the Pouter, white in colour, and 18 inches or more in height; and yet the two will pair and be prolific. So in the case of the Tumbler's atom of a beak and the Carrier's dagger-like bill; or, again, the smooth legs and feet of most Pigeons and the almost-winged leg of the Trumpeter, or the smooth crown and the turn crown, &c. Indeed, taking this view of Pigeon-fancying, it is not only a most interesting pastime, but the beautiful birds are themselves proofs of the truth of Holy Writ, and I delight to regard them as living rebukes of the unbeliever.

I must also beg to add one brief word concerning the union of the two London Pigeon Societies—a word of strong commendation of the step taken. It is just what is wanted. The paper issued by the Reorganisation Committee is admirable, and a plain proof that the old jeer about Pigeon-fanciers being uneducated is now wholly out of place. That paper might have been read before a learned society. I would venture to suggest that there should be a low rate of subscription for country members, who are not likely to be often in London, and yet would like much to be members. This plan would add considerably to the number of the subscribers, and greatly strengthen the Society. A county paper I know well did not pay when sold at a high price, but that now being greatly lowered, it pays well. Should this plan be adopted I shall be happy to belong to the Society, and ask my friends clerical and lay to do the same.—W. R.

BREEDING POUTER PIGEONS.

I HAVE just been reading Mr. Volkman's article in your paper last week, in answer to the remarks formerly made by Mr. Ure, Mr. Huie, and Mr. Stuart. As a Pigeon-fancier I am glad to see your columns open to discussion on this branch of the fancy. I only trust your kindness will not be abused. I thoroughly understand Mr. Volkman's views in respect to the breeding of the Pouter Pigeon. I am afraid, however, his enthusiasm for that class has carried him beyond his depth. Mr. Volkman, being an experienced breeder of long standing, must surely be aware of the insurmountable difficulties that debar the breeder of Pouter Pigeons from obtaining perfection, and less than that is evidently found fault with by our friend Mr. Volkman.

I am inclined to believe all has been and is now done to improve the Pouter in all its properties, that careful study, select matching, and access to an overflowing cash account in the bank could possibly do. It is a very easy matter to say that breeders should do this and that to obtain certain results in colour and marking along with the other indispensable properties; but surely Mr. Volkman is not so thoroughly ignorant, after his long experience in breeding his favourite Pouters, as not to know that that class cannot be put on a par with most other Pigeon classes; that anything like perfection can only be obtained very rarely, and that never with certainty, although hundreds are produced so near it that no one but a fancier, and he sometimes a whimsical one, could possibly discover a difference, and still this difference from the standard of perfection Mr. Volkman evidently thinks can be got over. Surely, if he will allow it, he is more intent in drawing out a few of the Scotch fanciers into a discussion, and leading them to give out unwittingly in the heat of argument a few valuable hints for the benefit of their English brethren, as to how they produce such magnificent specimens—for it is a very evident fact that the Scotch excel in this breed to a wonderful degree, and one would think that it was a decided misnomer to call this Pigeon the "English Pouter," seeing that it has emanated principally from Scotland during the

last century. However, I would not quarrel with a name, as that is of little importance so long as the Scotch breeders hold the laurels for producing the finest specimens ever yet exhibited, and therefore I think it can only be fairly inferred that they do not require any lesson how to breed.

As those of successful Pouter breeders of long standing, Mr. Ure's and Mr. Huie's views may be considered very valuable; also the remarks and information given us by the no less successful, though younger fancier, Mr. Stuart. I regret very much, however, to see an evident "worry" taking place by Mr. Volkman's erroneous and very inconsistent statement, when he unwarrantably tramps on their toes by insinuating that they had been breeding only for size, and "neglected" the property of colour and marking—telling them they should discard for a time the evident bad system they had adopted hitherto, which only produced size and symmetry, and little else to be commended. Now these assertions, without being facts, are apt to raise the Scotch blood a bit; and although Mr. Volkman is quite correct in advocating the exertions of all true fanciers to do all in their power to obtain as far as possible something like a standard, he should have stopped there, as a little reasoning would have proved to him that a Pouter Pigeon is such a combination of parts, so readily and easily effected, that no certainty could ever be relied on in production.

Would it not be much better if breeders and fanciers gave us a few practical hints as to their experience in the selection and matching of their birds, with the result? Some kind of information like this has never yet appeared in any publication as far as I have seen. Sterling facts would be eagerly read, as they might save the young fancier losing years in experimenting. Mr. Stuart very openly and candidly states one fact worthy of notice, and that is, his experience teaches him to select a moderate-sized hen to breed from. Now, here is a lesson that I dare say the inexperienced would have doubtless avoided if they had their choice.

Mr. Simpson, of Newark, gave us in a few lines downright straight-to-the-point information how he produced the best coloured Yellows and Reds. If Mr. Volkman would favour us with the description of the many birds he has bred, how he matched, and the results, as we are led to believe he has been very successful in obtaining all the properties, it will not only be more instructive, but may be more creditable to him as a breeder than all he could suggest should be done as "a fancier."

Your space is too valuable to be taken up with anything but useful information, and I trust the members of the fancy will not lose your favour by tiring you with irrelevant matter.—DEEDS SHOW.

A GUIDE TO CANARY-BREEDING.—No. 3.

THE birds on being introduced to each other will at first, most likely, evince anything but an amiable disposition, but this will in a day or two give way to a much happier state of things. The cock will be observed to feed his mate frequently, and she will begin to "nest," and will search eagerly for material with which to construct a habitation for her future progeny. The felt will supply this necessity, but a few feathers, or a piece of moss or soft doe hair—not cotton or wool, which is apt to become entangled in the feet—will afford her ample amusement. If this be not supplied, and no foreign material find its way within her reach, she will at once proceed to appropriate a portion of her lord and master's tail, or failing that, may watch her opportunity and seize him by the back of the neck in a most unfeminine way, swinging him backwards and forwards under the perch, till he falls and leaves her in possession of a monthful of feathers, a proceeding which he, like many other hen-pecked husbands, does not appear to dare to resent. If supplied with material and a suitable niche for her nest she will build one, and this is, as I have stated in a previous article, the common mode in the south. Different breeders adopt either plan. The felt nest has this advantage, that when the vermin begin to show themselves, and they most assuredly will, it can be changed at once, and an entirely clean nest substituted, which cannot be done so well with a nest of the bird's own construction, and those who know what pests these parasites are, are only too ready to adopt any plan of eradicating them.

In the course of a week or ten days after the publication of the hanns, the time varying according to the state of the weather, and the general health and condition of the birds, the hen will lay her first egg. The breeder need not be alarmed if the day before this most auspicious event he should find the

hen squatting in the bottom of the cage, generally with her head in a corner, with outspread wings, closed eyes, breathing rapidly, and looking the picture of misery, and as if at the point of death. At such a time it is best to leave Nature entirely to herself. Should the cock show any signs of molesting her he may be removed till the next day, but such is seldom the case, and the anxious novice who will, perhaps, be expecting to find his pet dead next morning, will find egg number one duly deposited, and the hen as well and as sprightly as ever. This complete prostration does not often happen. Should it, however, extend into the second day—that is, if she should not lay her egg in the morning, but be still evidently in a state of discomfort and pain, it will arise from her not being able to pass her egg, or being “egg-bound.” In this case hold her for a minute or two over the neck of a jug containing boiling water, exposing the vent to the action of the steam. Then replace her in the cage, and if the egg be not passed very shortly, repeat the operation, and if necessary, drop a single drop of olive oil on the vent, when, in nine cases out of ten, the egg will be passed without further trouble. Almost invariably one vapour bath is sufficient, and the egg is not unfrequently laid in the hand. Save it by all means, if possible; but these measures must be adopted with a view to save the bird, which must inevitably die if not relieved.

The Canary lays from three to six, and sometimes, but rarely, seven eggs, and has four or five nests in the season. Four is an average nest, five or six a good one. Take out the egg every morning till the third is laid. The object of this is to insure the eggs all being “chipped” together. In their natural state birds do not commence to incubate till they have laid their full complement; but the Canary will often sit on the first egg, which is not desirable, as the birds first chipped will necessarily be stronger than their brethren a day younger, and will secure most food, to the marked detriment of their less fortunate nestlings.

On the evening of the third day remove the felt in which the hen has been scuffling about for the last week, and substitute a clean one, nicely fitted to the tin, and securely fastened. Next morning the hen will have laid a fourth egg, and will at once begin to sit, seldom leaving her nest except to feed, and that not very often, as the cock, if he be a dutiful husband, will supply all her wants. The chipped egg, and all stimulating food, must now be discontinued.

The breeder can satisfy himself in a few days as to whether there be any vitality in the eggs by holding them up to the light, when the network of blood vessels can be distinctly seen, and in a day or two longer the egg becomes quite opaque. Such eggs are said to be “full,” others are worthless, and if at the expiration of a week they are perfectly transparent, they may at once be removed, as it is useless to distress the hen by allowing her to sit them out.—W. A. BLAKSTON.

GOLDFINCH AND CANARY MULES.

CAN you give me any information about breeding light-coloured mules between a Goldfinch and a hen Canary? I have been a breeder of mules a few years, and never have bred a buff or a yellow bird. I have bred from buff and yellow hens bred from yellow birds for twenty years.—L. S. D.

[Your correspondent wishes to discover a secret which many others would like to fathom. In my opinion mule-breeding is very much like a lottery—more blanks than prizes. There are, perhaps, more mules bred in this district than anywhere in England. I mean variegated Goldfinch and Canary mules. They are for the most part bred from a strain of birds known among breeders as belonging to the “marked mule tribe;” but what this “marked mule tribe” is, or whence its origin, I know not. I take it to be after this fashion:—

A breeder discovers that among a number of hens put up with Goldfinches one only shows a disposition to throw her young ones nearer the Canary than the Finch, and accordingly he experiments with her progeny—that is, with the young ones he may obtain from her by a Canary cock. These he breeds from again and again regardless of their feather; all he desires is to perpetuate a strain of birds which has a disposition to throw mules more nearly approaching the Canary than the Finch. By-and-by he becomes somewhat celebrated, and is reported to have a fine strain of mule-breeding hens. That there are such is beyond doubt the case, but to obtain them from their owners is almost impossible. The value attached to them and the interest centered in them is something beyond belief. There is some truth in the story of the pitman, who when dying said,

“Mary, hinny! I wad like to live the season oot, to see whether the ould dun hen wadn’t breed a clean mule!”

I have a cock and hen from a noted strain, which has not been contaminated with any cross for twenty-nine years. They are from the nest immediately preceding one which contained some first-class mules. I have also a cock and two hens from another noted strain, the property of the late T. Reid, Esq., Belgian Vice-Consul at Newcastle, a noted ornithologist, whose melancholy death a short time ago threw a gloom over this entire district. His stock was eagerly sought for, and I was fortunate enough to secure what I have mentioned. If your correspondent is very anxious to try for mules I will sell him one hen, but I cannot spare more. As may be expected from continued in-and-in breeding, they are very insignificant in appearance, their merit being in the certainty of their producing mules more or less marked.—W. A. BLAKSTON, *Sunderland.*]

CONSEQUENCES OF MISMANAGEMENT.

You have not yet made it clear to me what has been the cause of the comparative weakness of my Ligurians. I may, however, remark that a friend who has been looking at them thinks they are doing very fairly. Perhaps my alarm was partly owing to my expectation of something quite out of the common, and to my comparing them with a remarkably strong and active hive of good old John Bulls (which, however, I must say owe me something, as I got no honey from them last year, nor any swarm that I know of). This beautiful mild morning the Ligurians are out in numbers sufficient to satisfy any one, but on colder days they are decidedly less active than the English bees.

Pray tell me what was wrong in my driving last year. It was not by any means a large swarm which I drove. Was it too early, May 31st? I should like to know what course you would have recommended when the bees refused to go into a glass super, and were hanging out idle, and would inevitably have swarmed in a few days, which swarm I should probably have lost, as there were then no bushes in my garden. I have had some planted since.

The driven swarm, though not large, would, doubtless, have done very well had I been at home to feed it a little during the wet weather in July; but unless Italian bees are very sentimental, I do not see how its miserable end could have affected the parent stock.

My friend says that the whole of my mismanagement consisted in not stopping up the hives with tow during the snow in December, but I was again from home. Of course beekeepers should never go from home, but such things will happen.

May I ask if Lapwings in the garden would be injurious to the bees? Also, will you say whether dahlias are poisonous to bees?—S. S.

[If we have not already been sufficiently explicit we will now endeavour to be so. What was wrong in your driving was permitting the expelled bees to starve; what was wrong afterwards was allowing the stock which you had denuded of its surplus population to exhaust itself by over-swarming without applying a remedy; and what was quite as wrong as either was withholding an important fact, and endeavouring to throw discredit on the innocent victims of your own mismanagement. It is sheer nonsense to compare a stock which has been so treated with one that has remained intact, and then talk about “lazy” and “sentimental Ligurians” and “good old John Bulls.” Stopping up hives with tow during snow in December might very possibly result in a catastrophe by suffocation. Lapwings are insectivorous, but whether they would eat bees we are doubtful. We do not believe that dahlias are poisonous to bees.]

SHIFTING BEES INTO A NEW HIVE.

I HAVE a hive of bees, which is very strong; they did not swarm last year, and have wintered very well. The hive is a very old one (three or four years), and the briers that hold it together have given way in places. I wish, therefore, to know how I had better act, so as to remove the bees from the hive, and still preserve the brood, which is coming forward at this time of the year. I wish if possible to prevent from swarming, and yet still have a new hive for next winter. Do you think it would be most profitable to make an artificial swarm, as described in a February number, or to leave the hive alone till autumn, then drive the bees out of it, and esta-

blish them in a new hive? Do you not think the latter plan will come rather expensive with the feeding they will require? or will it be possible to drive them in August without destroying much brood?—CAROLUS.

[Your object of shifting the bees into a new hive without permitting them to swarm will be most completely attained by transferring the stock to a Woodbury frame hive in the manner described by us in No. 318 in reply to "Squir." Or you may permit the hive to swarm naturally, and on the twenty-first day after the issue of the first expel the remaining bees by driving, and add them to the last swarm, appropriating the combs, which will then be free from brood, to such purpose as you may see fit. If you drive the bees in autumn as you propose, it will be better to unite them to another stock rather than incur the expense of supplying them with sufficient food to enable them to build and store combs for the winter. This expense may, however, be very materially diminished if you are able to induct them into a hive already furnished with combs.]

COMB-CONSTRUCTION IN WOODBURY HIVES.

I HAVE a Woodbury frame hive in use, and like it much, but find that the bees do not fix the combs regularly on the line of the bars. How can this be obviated?—C. B.

[We always superintend the construction of combs in a frame hive ourselves, inspecting them from time to time, and promptly correcting any incipient deviation from the straight line. If yours are very irregularly made, the best plan will be to wait until the hive becomes well filled with bees (say towards the end of April or early in May), and then during the middle of a fine day drive all the bees into an empty hive, which place on the old stance, and then convey their original habitation in-doors, where such of the combs as require it may be either wholly or partially detached from their frames, and temporarily secured in the correct position by means of zinc clips and thin strips of wood tacked on in the manner delineated in page 84 of "The Gardener's Almanack." Bent combs must be set straight; and if not sufficiently pliable may be slightly warmed by the fire. Thickened parts should be pared down, but take care that the cells on each side are left of equal length, and that the "partition wall" of every comb is in the centre of each bar. It is better to remove the projecting Woodbury rib from the bars, and the bees will attach their combs to them with greater facility if their under surface be coated with melted wax. When the job is completed, and the combs arranged in their new apartment in the same order as that which they occupied in their old one, temporarily deepen the hive by putting an empty one of the same size, from which the frames, and crown and floor boards have been removed, on the top, and then place the whole on the old stance, knocking the cluster of bees out of their temporary place of refuge into the empty hive, and on to the top of the exposed frames, instantly pulling on the crown board. The inverted hive may be removed the next morning, and all, or nearly all, the artificial supports from the combs the day after.]

OUR LETTER BOX.

CHARACTERISTICS OF HOUDANS (*Lincolnshire Subscriber*).—It is with Houdans as with all other birds as soon as there is a demand for them. Fowls with some only of the characteristics of the breed are sold as pure specimens. We fear it has been the case with yours. Pure birds must have top-knots, beards, and five claws. The nearer the plumage approaches to unmixed black the better the birds; old hens will, however, have their top-knots tipped with white, and it is difficult to obtain the cocks without some mixture of white or yellow plumage after the first moulting, but red feathers are a serious fault. You would be disqualified if you showed unbearded birds. Alter your feeding by substituting once every day meal for whole corn, and consider your potatoes rather as playthings than as sustenance. Discontinue the eggshells. They make fowls egg-eaters. We keep large numbers, we never knew one broody.

DUCKINGS DYING (*Old Duck*).—Oatmeal is the best Duck's food. Mix with their meal fine gravel, and put a sod of earth covered with grass in the vessel that holds their food.

GOLDEN-SPANGLED HAMBURGERS' EGGS UNFERTILE (*A Constant Subscriber*).—We cannot guess the cause of the failure. We know to what most people would point, but we do not believe in such causes. It is a common complaint early in the season, but after results prove it a false one. There can, however, be no harm in trying another cock. It is often the result of bad sitting on the part of the hens, when, as in this season, broody ones have been scarce enough to make breeders anxious and less careful than they should be in assuring themselves of hens which are really staunch sitters. Such will sit partially just long enough to spoil the eggs, and then be as steady as possible. The morning frosts have been quite hard enough to spoil eggs. Have these been clear or rotten?

BRAHMA FOOTBALLS WEN-ROOTED (*H. P. L.*).—We should care little for the web between the toes. The outside toe is always short. When the toe is under the other, we should release it by cutting the leaders at the end.

SPANISH COCK WITH ENLARGED EYELIDS (*An Amateur*).—We suppose by the eyelid you mean the white face, the point of beauty. Benefit sometimes arises from frequent washing with strong alum, or vinegar and water applied cold and very strong. You must not cut it. If the eye is quite closed you must open it, and fasten it open with narrow strips of some adhesive plaster. They must remain on till the skin becomes contracted, and the bird can see again.

COLOUR OF COCHIN CHINESE EGGS (*Mona*).—Why the eggshells sometimes are white can never be settled. We have often noticed the same in all breeds of Cochins and Brahmas. Game fowls and White Dorkings will often lay brown eggs. Among our Cochins and Brahmas we have sometimes eggs almost as dark as chocolate "au lait," and others nearly white. We have often made it the cause of inquiry among our people. But one ever attempted an answer, and she (an old woman), said she had noticed that the eggs were dark, just in proportion to the heat of the weather: cold weather invariably made them pale. We have often noticed the eggs of White Cochins covered with white, apparently chalk spots. Although a perfectly white egg in a Cochin house, where that breed only was kept, would give us doubts, yet variety of colour or shade, however great, is not, in our opinion, inconsistent with absolute purity of breed in Cochins.

WEAK-LEGGED BANTAMS (*G. D.*).—We cannot advise you to breed from the Game Bantams again. We should avoid the strain, but if some of the pullets were good enough in points to make it desirable, we should put them to a cock that could not be akin to them. If the chickens were hatched under favourable circumstances, and provided with all that is necessary for successful rearing, they must be altogether wanting in constitution. Many birds will have white flights in their chicken wings, but moulting them out the first time. If, however, you have any intention to show, you must not breed from the cock you mention. It is probably the result of a cross that was made many years ago, and still throws back a little to Duckwing or Pile. Breeding in, or between brother and sister—indeed, anything that weakens constitution, has a tendency to produce white feathers.

HENS CEASING TO LAY (*An Amateur*).—Sharp frosts and cold winds are not helps to laying, neither will fowls lay every week alike. Your feeding is not good. If by meat you mean raw meat, they have far too much. They do not want it more than three times per week, and can do without it altogether. Potatoes are poor food, and rice is worthless. We prefer Indian corn whole to ground. Give this once every day, except when meat is given. The other two meals should be of whole barley once, and barley or oatmeal once, slaked with water. Cooked food, such as scraps of dried outside or knuckle of leg or shoulder of mutton chopped fine, is better than any raw meat. With the latter twice per day, the fowls become too fat, and not only lay less, but frequently die from the obstruction caused by internal fat.

BREEDING POULTRY PROFITABLY (*L. R.*).—We will endeavour to give you some details next week. In the meantime we can tell you that all Irish chickens at the present time are making 6s. per couple in London. Messrs. Howard & Fricker, of Leadenhall Market, are most respectable and trustworthy men, and would make quick and conscientious returns. Now, however, is the time to sell "profitable poultry." It is and will be very dear for the next seven or eight weeks, after that it will be cheaper.

HIVES (*W. Early*).—We consider any form of hive which will admit of supering to be superior to the collateral system, upon which Nutt's hives are made.

ASPECT FOR BEE HOUSE (*J. B.*).—We do not esteem aspect to be of primary importance, but prefer to place our hives facing towards the south. Any point between south-east and south-west will do.

LIGURIANISING (*G. J.*).—As you do not describe the hives in which your bees are domiciled, we are unable to advise you. Read Mr. Woodbury's article on "Propagating Ligurians," which appeared in No. 315, and if you want further information write to us again, stating where you are at a loss and what kind of hives you use. Assiduity in pollen-gathering is a tolerably sure sign of the presence of brood in a hive. The propagation of Ligurians may commence as soon as drone brood is pretty well advanced.

HIVES CONTAINING EMPTY COMBS (*H. M. K.*).—It is scarcely possible to overrate the advantage of having bees in hives already furnished with combs. If, therefore, the last year's swarms really died from starvation and not from disease, by all means induct fresh swarms into their old combs. You will find no difficulty in so doing, and it will be benefit rather than otherwise if it compels you to forego the now-exploded process of preparing the hives with balm, &c.

FEARS (*J. Z.*).—The following is all the information we can give you:—"Cleanliness and frequent sprinkling of the room with a simple decoction of wormwood will soon exterminate the whole breed of these troublesome vermin, and the best remedy to expel them from bedclothes is a bag filled with dry moss, the odour of which is to them extremely offensive. Others cover the floors of the rooms where fleas abound with leaves of the alder tree while the dew is on the foliage, to which these insects fondly adhere, and thus may be easily destroyed. Fumigation with the leaves of pennyroyal, or the fresh-gathered foliage of that plant sown up in a bag, and laid in the bed, are also remedies pointed out for the expulsion of fleas. The most effectual and speedy way to get rid of fleas or dogs is to pour sweet or train oil along the back, from the top of the rump to the back of the head, rubbing the sides, haunches, and flanks well with the hand until the oil be well incorporated with the hair. If this be done properly it is said that there will not remain a living flea on the animal in ten minutes after the application. They will throw themselves out upon the surface of the hair, of a yellow colour, with legs, &c., extended, and die almost instantaneously."

POULTRY MARKET.—APRIL 1.

FAMINE supply and famine prices. Some are gone, others are not come, and, therefore, salesmen's stalls are a "beggarly account of empty benches." The past week saw the arrival of the first Plover's eggs of the season. Many were sold at 5s. each.

	s.	d.		s.	d.		s.	d.
Large Fowls	5	0	to 6	0		Pheasants	0	0 to 0 0
Smaller do.	4	6	5	0		Partridges	0	0 0 0
Chickens	3	6	4	0		Guinea Fowls	3	6 4 0
Goshawks	8	0	9	0		Hares	0	0 0 0
Ducklings	6	0	7	0		Rabbits	1	4 1 5
Pigeons	0	8	0	9		Wild do.	0	8 0 9

WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 9-15, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
9	Fr	Royal Horticultural Society, Opening of Good Friday. (Messrs. Lane's Show.	55.0	35.6	45.3	20	20	af 5	46	af 6	28	af 9	49	af 6	16	1 29	160
10	F		56.1	35.5	44.8	15	18	5	47	6	33	10	13	7	17	1 12	161
11	S	Royal Horticultural Society, Promenade.	56.1	35.6	45.9	20	16	5	49	6	33	11	49	7	18	0 56	162
12	Scn	EASTER SUNDAY.	55.9	35.6	46.3	26	14	5	50	6	moon.	30	8		19	0 40	163
13	M	EASTER MONDAY.	55.7	35.5	45.6	16	11	5	52	6	27	0	16	9	20	0 24	164
14	Tu		57.2	36.2	46.7	16	8	5	54	6	17	1	7	10	(	after.	165
15	W	Meeting of Society of Arts.	58.1	37.8	47.9	20	5	5	55	6	57	1	2	11	22	0 6	166

From observations taken near London during the last forty-one years, the average day temperature of the week is 56.3°; and its night temperature 35.8°. The greatest heat was 77°, on the 14th, 1862; and the lowest cold 20°, on the 10th, 1860; and 15th, 1862. The greatest fall of rain was 0.73 inch.

THE DAHLIA AS A BEDDING PLANT—STORING THE TUBERS.



BY many flower gardeners the florists' Dahlia is voted a slow plant, its blooming period being somewhat short, and its habit not a little intractable; for it refuses to submit, or yields with a very bad grace, to the process of pegging-down. The appearance of those inevitable half-naked stakes is also decidedly inartistic, remaining an eyesore for many weeks during the early part of the season; and even the habit and form of both plant

and flower are sometimes said to be almost vulgarly ungraceful. This last allegation, however, I take to proceed more from the fact of the Dahlia being frequently met with in positions not the most picturesque than from any vulgarity in the flower itself. A stand of Dahlias at a flower show as usually seen does not present a picture of beauty calculated to throw a flower gardener into a state of ecstasy any more than do the long lines and borders of our florist friends, or the monotonously grand banks of our great growers; yet as a purely decorative plant, though not fashionable, the Dahlia is a gorgeous subject.

Like nine-tenths of all the bedding plants with which we have to deal, it is seen to most advantage in circular beds, and, up to a certain size, the larger they are the better; for it must be borne in mind that it is what is called in common parlance a large-featured plant, large both in leaf and flower, and to it as such the surrounding features must be assimilated. Its forte is producing an effect, not near at hand, of rich heavy luxuriance, the sort of beauty we are supposed to admire in the foreground of some highly-coloured southern landscape. Yet when planted in what are called the neutral or central beds of a large set it is also very effective, these acting as resting places for the weary eye, which, tired of scanning so much colour, intuitively turns to and is pleased to rest upon something more massive than dazzling, and which those who love to compare flower gardening to music would call the low rich notes of the piece.

For an isolated bed to stand entirely on its own merits—for instance, a bed of 15 feet in diameter—put one of the tallest dark sorts in the centre; round it, and at a distance of 18 inches, have five mixed sorts, but inclining to maroon; again, at 2 feet, another circle, in which bronze and crimson are the prevailing colours; and at 2½ feet, a third ring, composed of pink, lilac, and orange varieties, with an edging of Yellow Zelinda round the whole. Thus without any very regular gradation of colours we pass from sober to gay, the most striking being in the outer circles. In arranging the distances, the nature of the soil and situation must be considered; but as a rule Dahlias should be planted most thickly towards the centre of the bed, and there tied up to single stakes, the distances increasing with each circle. The plants towards the outside should be trained with three or more stems to as many stakes, while those forming the edging may be pegged down with more or less severity, so that the whole, when at perfection, will form a pyramid not stiff, yet possessed of that sym-

metry and balance, without which no circular beds can ever please the eye, no matter what their contents may be.

But the purpose for which we see the Dahlia most frequently used in the flower garden is as a backing for ribbon borders which have a wall or shrubbery behind. Now I know it is ungenerous, if not unjust, to find fault with anything, be it only a flower, without being able to give a reason for so doing. He who wrote—

"I do not like thee, Dr. Fell!
The reason why I cannot tell;
But, I do not like thee, Dr. Fell!"

penned a piece of doggerel which gives expression to a large amount of truth and bad logic; yet, substituting, of course, a Dahlia for the detested medical man, it exactly expresses my humble opinion upon this floral subject. Somehow or other Dahlias seem to make a ribbon border, which is at any time the very essence of cut-and-dried formality, still more formal. In borders similarly situated but planted in the mixed style, they do better, especially if relieved by plants of lighter form, such as Humeas, and when those immediately in front of them are of a height sufficient to hide their lower parts. Thus planted they form an excellent background for what is, when well arranged, a much more tasteful border than any planted ribbon-fashion can ever be.

Of bedding Dahlias proper there is now a rich variety and every year is adding to the number, but the selfs—white, yellow, scarlet, and purple—are those most suitable for flower-garden purposes, and may be introduced with advantage into any set of beds where very early flowering is not a primary consideration. They succeed best in a rather light, not too rich soil, a spadeful or two of something good being given them at planting time to afford them a start; after which their mission being to flower, they do so more speedily and profusely in somewhat poor soil.

A very attractive circular bed can be made by planting the following sorts in rings 18 inches apart, round a centre of Purple Zelinda 2½ feet in diameter:—First circle, Tiger, maroon; second, Prince Arthur, crimson; third, Crystal Palace Scarlet; fourth, Titian, yellow; fifth, Alba floribunda, white, and an edging of Mignonette, if on gravel, or Prince of Orange Calceolaria, if on grass. Prince Arthur, crimson, edged with bands of Cineraria maritima and Lobelia Paxtonii is also very effective, forming a quiet bed. The average height of these varieties being about 2½ feet, only those forming the outer circles require pegging-down; for the others stakes short enough to be entirely hidden should be used. Short, stout pieces of pea rods with part of the branches left on, placed among them when the flower stalks are well up, are also of great service, keeping them from swaying with the wind, and even in the case of those pegged down this precaution is sometimes necessary.

Passing over the propagation and culture of the Dahlia as sufficiently well known, allow me to say a word, however unseasonable, upon the storing of the roots over winter. Sanctioned by custom, it has long been thought a matter of great importance by many that the tubers should when taken up in autumn be carefully dried, and

kept dry until the following spring, and where a suitable place, neither so dry as to shrivel, nor so damp as to rot them, can be had, no doubt this plan gives ample satisfaction; yet they keep much better if laid, when large quantities of them are used, in long narrow heaps, mixed with sand, and carefully covered like Potatoes, care being taken, of course, to exclude both frost and rain. In spring they start more freely and at a lower temperature than those kept in a dry loft or room. Nature is in this, although not in every case, the best teacher.—*AYRSHIRE GARDENER.*

CAMELLIAS.

I do not suppose that it is useful that a person should grow a whole houseful of plants of any one kind to enable him to speak with any degree of experience on their cultivation, but that the same treatment which is found beneficial for a dozen plants is likely to be equally good for fifty or a hundred. I know that in reading the details of cultivation given from time to time in *THE JOURNAL OF HORTICULTURE* I never stop to inquire what is the number of the plants the cultivator grows, feeling that if I see good common sense, and am told that the plan has been successful, it is of very little moment to me what number of the particular plant he has under his care, and I am ready to take a hint from him, whether he be a large or a small grower; and, therefore, although my Camellia-growing is only in a very small way, yet the results that I have obtained are to me so satisfactory, that I may be pardoned, perhaps, if I detail it, and add a few notes on varieties.

There was a considerable amount of controversy last year in the Journal about the proper way to grow them. It interested me, and it seemed to me that the balance of argument was on the side of Mr. Pearson, of Chilwell, and I adopted in consequence his plan—*i.e.* I potted the Camellias in quite fresh loam taken off a pasture, about an inch in thickness, and torn up into small pieces about an inch square. I did this as soon as the plants were out of bloom, just as they were beginning to make their fresh shoots, taking care not to overpot them. They were then kept in a coolinery, where the Vines were just beginning to start, and kept syringed twice a-day. After remaining here until the shoots had acquired their full growth, they were removed into the front greenhouse facing the south, and placed on the front shelf with a blind of thick tiffany stretched over them. Here they were syringed as before; they were never put out of doors, never exposed to the weather in any way; and whether from these causes or not I do not know, but certainly I have never grown Camellias with anything like the satisfaction I have done these, for I had a quantity of bloom—so much so, that I was obliged to take off a large number, and had even then on a plant of Jubilee in a 32-pot nineteen blooms large and full. These results justify me in going on in the same way, and I shall certainly never adopt any other plan as long as I grow them. That equally favourable results may be obtained by other means I will not deny; the Ghent growers, for example, grow their Camellias almost exclusively in peat and leaf mould, and nothing can be better than theirs are. Still, having tried that and seen the superiority of those grown as I have detailed, I intend to adhere to Mr. Pearson's method of treatment. They like plenty of water and shade, and I prefer giving them both by artificial means rather than placing them under trees and getting the heavy rains upon them.

With regard to varieties, there are, as may be seen by referring to the Belgian catalogues, a vast number; but, as with every other flower, the lists contain many very inferior varieties, while in almost every colour now there are sorts whose shape and appearance it seems impossible to surpass. The following sorts I have grown myself, and give my opinion of them for what it is worth, holding as I do in this as in other flowers, that shape is of the greatest consequence:—

1. *SARAH FROST*, said to be of American origin; but wherever it comes from, a most beautiful flower, of a deep rosy pink colour, beautiful in shape, large and full. The habit of the plant, too, is excellent. Altogether first-rate.

2. *CONTESSA LAVINIA MAGGI*, a large, fine, striped flower, decidedly of the deep Carnation-striped flowers the very best we have. It has a tendency at times to come semi-double, my plant this year having produced several flowers of this character, and showing the stamens, but it is a noble flower.

3. *MRS. ABBEY WILDER*, an exquisitely-shaped white flower, most beautifully imbricated and pure in colour; its habit also is very good, and it flowers very freely.

4. *COMTESSE BOUTOURLIN*, a large rosy carmine flower, somewhat flat but striking in appearance; it is one of the large handsome-foliaged varieties.

5. *MRS. COPE*, an exquisite flower, white, faintly striped with pink; foliage small and neat; habit of the plant pyramidal. Altogether a desirable variety.

6. *MONTIRONI*, an old and well-known favourite, white, good habit, and free.

7. *JUBILEE*, another well-known flower of Messrs. Low, of Clapton; it is of most admirable habit, and very fine. My plant this year was a perfect picture.

8. *DUCHESSE DE BERRI*, an exquisitely shaped white flower, but the bud is large and hard, and I have found a difficulty in getting it to open; when it does it is very lovely.

9. *MAGNIFICENT*, a flower of very great size, deep rosy carmine; but I have found it so very double and so hard to open, that I have after two seasons given it up; moreover, it is somewhat coarse even when it does open.

10. *JENNY LIND*, an exquisite flower, faintly but regularly striped with pink; nothing can be more charming in its way than this is.

12. *REINE DES BEAUTÉS*, a lovely flower, beautiful delicate blush, of very fine shape, and well deserving of its name. It is said to be a sport from Mrs. Abbey Wilder, and partakes very much of the character of that flower.

13. *MRS. DOMERAIN*, a beautiful delicate light pink flower, shape excellent, habit good. It is quite a new variety, and not very well known, but it is very fine.

14. *RUBENS*, a small red flower, worth growing for the remarkable endurance of its blooms, which remain for a very long time on the plant without fading.

15. *CANDIDISSIMA*, an old variety, pure white, and well deserving of a place in any collection. Its habit does not seem to me to be very good.

16. *SACCOI NOVA*, another old sort, vigorous in growth, and very free; well worthy a place in a collection.

17. *CONTE BERNARDINO LECHI*, a new sort, which has not flowered quite yet; it seems to be a large flaked flower, and promises well.

18. *CUP OF BEAUTY*, an exquisite light flower, of first-rate shape and quality.

19. *COUNTESS OF ORKNEY*, a fine flower, of large size and exquisite shape, beautifully flaked with bright rose.

20. *AUGUSTE DELFOSSE*, a bright red flower, but somewhat starchy and faulty in shape.

21. *IMBRICATA*, an old and well-known flower of fine shape, red colour, and vigorous habit.

22. *DOUBLE WHITE*, an old and very favourite flower, pure white, of good habit.

23. *FIMBRIATA*, quite a gem, pure white, the edges of the petals beautifully fringed; a general favourite.

24. *MATHOTIANA*, a very large, nay enormous flower, very remarkable in appearance, but somewhat coarse.

I believe a very good selection may be made from these. I prefer No. 1, 2, 3, 5, 6, 7, 10, 12, 13, 15, 18, 19, 21, 22, and 23. Doubtless there are many others very good, but I only write of those which have bloomed under my own eye.—*D., Deal.*

PELARGONIUMS.

I wish to publish this short note on the very remarkable growth of a few Pelargoniums placed under my care.

Amy Hogg.—Colour bright purplish rose, flowers in very large trusses. This was a small cutting struck in August last. It has grown very freely. Some of my plants measure 2 feet through, and are beautifully formed.

Duchess is a soft rose lake, and is said to be of dwarf habit, but is a very strong grower here. It has immense foliage, the leaves measuring 9½ inches by 8 inches. The plant is young, being only the same age as Amy Hogg.

Culford Rose is another, and, perhaps, the best of the Zonal Pelargoniums. It has most beautiful foliage, almost as ornamental as that of a Gesnera. Its leaves measure 9 inches by 7½ inches.

Magenta is also a fine sort.

Clipper, Baron Ricasoli, Beaton's Indian Yellow, Black Dwarf, Dr. Lindley, and Orange Nosegay, are fine for growing as bedding plants, as well as for pot culture. They ought to have a place in every flower garden. When grown well they look magnificent in a conservatory. I have had them one mass of bloom in June, July, August, and part of September. It is as well not to allow them to remain in flower later than the

end of August, or beginning of September, if they are wanted to come in next season.

Cloth of Gold is growing here this winter and spring (so far) better than I ever saw it at any place. I have some plants 3 feet 4 inches in diameter. They look well in the conservatory or greenhouse when mixed with other well-grown *Pelargoniums*, if the foliage is fine.

The compost I use for the above-named plants consists of good turfy loam three parts, decomposed cow dung one-fourth, and white sand one-tenth, with a small quantity of bone dust. These ingredients are all well mixed together, and the whole is allowed to acquire a proper temperature before potting.—J. A. RONEY, *Wistaston*.

PEACH AND NECTARINE TREES OUT OF DOORS.

I NOTICE in a recent number a letter from "OBSERVER," entitled "New Glass Structures for Growing Fruit," in which he speaks of Peach and Nectarine trees having lost their constitutional strength, and as being now no longer hardy as in former years; and he goes on to say that "a wall heated while the sun shines on it, and a wall rendered cold by wind and evaporation when the sun is off, does not seem to suit these now tender plants, neither does too great an amount of moisture to the roots, especially in autumn, agree with their delicate constitutions. Cold, moisture-absorbing winds cause a chill. Bringing the trees in too close contact with walls by nails cripples them," &c.

Now, as statements of this kind often appear, particularly from advocates of orchard houses, against which I have nothing to say, inasmuch as they are delightful accessories to any garden, I should be glad to know whether in the south of England, or at all events south of London, your readers can endorse the opinions of "OBSERVER." For my own part, living in Sussex, I have never failed for the last six years to have a good crop of Peaches and Nectarines out of doors. I mention six years, because I did not attempt much gardening before then. I have been successful on the chalk and the stiff Wealden clay; but as the loam of the latter district is far stronger than any soil to be found on the chalk, I have more vigorous trees and heavier crops on it than I ever could obtain on the chalk. I have found a change from the chalk to the loam with a clay subsoil very beneficial; and I have one tree in particular, which labours under all the supposed disadvantages mentioned by "OBSERVER," a perfect picture of health and vigour, carrying regularly almost any amount of fruit, and, as a matter of taste, I prefer the flavour of a Peach off a good warm wall to that of those from orchard-house trees, with which, also, I have had no difficulty.

I think there is a tendency in these days to go into far too many extravagances in the way of "new structures," which may be all very well for those who have unlimited means, but are quite unnecessary for Peach, Nectarine, or Apricot trees in this part of the country, and I do not like to hear that some of our most choice and national fruits are becoming debilitated and unfit for out-door cultivation, for now that glass houses are so common, I imagine the true reason is that sufficient care is not bestowed on the things which our fathers brought to perfection in the open air, when, as far as I know, the winters were even more severe than they generally are now.

Only the other day I saw an Apricot tree quite 30 feet high spreading over the gable end of an old farmhouse. Its stem was like the stem of a large Apple tree, and a neglected grass lawn entirely covered its roots, which were, doubtless, far down in a wonderfully stiff and very wet soil, yet none of its limbs seemed to fail, and the farmer told me it almost always had an abundant crop. It has now quite a mass of bloom, as very little pruning has troubled it for many a year. Yet I hear and read that there are no old Apricot trees now-a-days, and that they must be grown under glass. If these fruits are required early they must be forced under glass; but with proper management, or even as this Apricot tree seems to say, with no management, they may be grown very well here without it.

Now, surely, one instance like that of this Apricot or my Peach tree puts a negative on the assertions of "OBSERVER," and reduces the facts that may have come under his observation from the region of climate or other source of supposed degeneracy to culture. The conditions which maintained that Apricot in health and fertility for fifty and more years would have maintained any number of trees similarly circumstanced, and the supposed evils of training a Peach tree on a wall,

which "OBSERVER" enumerates, cannot be the real cause of his failures, for, if not the cause, they are co-existent with my success. In gardening matters there is often something wanting; it is our business, by patiently comparing fact with fact, to find out what that something is.—H. NICHOLLS, *Hawkhurst Lodge, Burdocks, Horsham*.

OLD YEW TREE.

In the churchyard at Gresford, near Wrexham, Denbighshire, is a large old Yew tree. Its circumference at the ground, following the irregularities of the trunk, is 31 feet 6 inches, and at 3 feet from the ground, 32 feet 1 inch. At 3 feet 6 inches from the ground the girth, on merely passing the tape round, is 26 feet 3 inches. The tree has evidently been in declining health for some years, as some of the upper branches are bare of foliage, otherwise it is perfect; the trunk, a low one of 6 feet, particularly so, having no holes in it. The bark, however, is not good all round, still the stem is sound.

In London's "Gardener's Magazine" I find the following notice of this tree at page 536 of the volume for 1836:—"A Yew tree in Gresford churchyard, near Wrexham, is 29 feet in girth at 5 feet from the ground; height 52 feet, and the diameter of the head 36 feet.—J. E. BOWMAN, July 1, 1836." From the decay of the upper limbs the tree is studded with small branches or twigs at the setting-on of the branches, and at 5 feet no correct circumference could be arrived at.

The church is surrounded with Yew trees in a flourishing state, and few of less age than five hundred years.—G. A.

BOILERS FOR HEATING BY HOT WATER.

MR. R. FEATHERSTONE stated that his employer, Mr. Butler, purchased one of Clarke's water-jacket furnace boilers some two or three years ago, but that it fails entirely when he has to burn inferior fuel, such as they use in the garden, and that he objects to hollow firebars, as they tend to prevent thorough combustion.

I have had two of the above boilers at work for about the same period, and I can conscientiously testify that the heat is so intense in my water-jacket furnace, that it would melt cinders. Would this be considered thorough combustion? and if Mr. Butler's boiler will not do that, there is something wrong with the draught. Our boilers are heating piping for top and bottom heat for one thousand Cucumber plants. We sow in January, and cut fruit of the same plants in March.—JAMES WHITAKER, *Bark House, Prescott*.

ROYAL HORTICULTURAL SOCIETY.

APRIL 7TH.

FRUIT COMMITTEE.—George F. Wilson, Esq., F.R.S., in the chair. Mr. W. Hallett, of Cossington House, Bridgwater, sent two braces of Cucumbers, one named Cossington Hero, and the other Hallett's Perfection. Mr. S. Brister, Whitton, near Hounslow, sent a seedling Apple which was not of any value; and Mr. Whiting, of The Deepdene, sent specimens of Wilcox and Wilcox Improved Broccoli.

FLORAL COMMITTEE.—Another most successful meeting was held this day; it is most gratifying to witness how much interest these fortnightly meetings have excited; the liberal support of so many exhibitors tends to the success, and deserves the thanks of the Society. It is now evident that the spirit of horticulture, pure and simple, is in the ascendency, and we may now confidently expect better days for the Society. Indeed, the collection of hybrid *Coleus*, exhibited from the Society's own gardens at Chiswick, must have convinced the most sceptical that the dear old garden is still vigorous. Mr. Banse's seedling *Coleus* cannot be too highly commended, they are vigorous and a vast improvement in this family. All honour be to the indefatigable hybridiser, who is so devoted to his calling. Without doubt they are one of the greatest advances yet made in this direction. These plants will be highly esteemed in the horticultural world, and will be very beneficial to the Society.

The awards made were numerous. Messrs. Veitch exhibited several new plants, especially Orchids, but some not being recognised by name they must await their awards. Some of them were very fine, especially an *Anguloa*, which is of first-rate merit. A special certificate was awarded for *Angreum citratum*; a first-class certificate for *Pandanus gramineus*; and a special certificate for the beautiful collection of Orchids.

Mr. Davies, Ormskirk, sent a hybrid *Azalea*, called *Odorata*, profusely covered with white flowers and very ornamental; it received a first-class certificate. Messrs. E. G. Henderson sent *Primula elatior* Golden Prince, a true *Polyanthus* with deep yellow trusses, most

beautiful, and as a spring decorative flower invaluable; it received a first-class certificate; cut specimens of *Trichopilia snavis* from the same firm had a special certificate, and *Trichopilia* var. *splendens*, had a first-class certificate. Mr. Williams, Holloway, exhibited a fine specimen of *Imantophyllum* miniatum with numerous heads of flowers, and a special certificate was awarded for excellent cultivation. Mr. Baxter, gardener to C. Keiser, Esq., sent *Amaryllis Othello*, a very dark red variety, smooth in outline and good, and received a first-class certificate. A special certificate was awarded him for the collection of seedlings, some of them of good character. Mr. Turner, of Slough, was awarded second-class certificates for seedling *Auriculas*, green-edged, Col. Champneys; and grey-edged, Competitor; of Selfs, King of Crimsous, a beautiful flower, had a first-class certificate; Jessie, dark, one of the second-class; Princess, a deep purple, a first-class certificate. A special certificate was awarded for the collection of show *Auriculas*, and also for the collection of Selfs. These latter are called *Alpines*, but the term is inadmissible.

Mr. Trussler, gardener to R. J. Kay, Esq., received a special certificate for a box of cut *Camellias*; Mr. Green, gardener to W. W. Saunders, Esq., a special certificate for a very nice collection of plants, many of the minute *Orchids* among them. These discarded plants of the great orchidists Mr. Saunders delights in cultivating, and most truly beautiful and interesting they are. Mr. W. Paul received a special certificate for a collection of superb cut *Roses*. He also exhibited some very small plants of *Likodendrons* beautifully in flower. They were grafted last September, the flower-buds being then formed, kept in a cool place till spring, and then received a little heat. He also sent a collection of *Variegated Zonal Pelargoniums* which have been previously noticed.

Mr. Pilcher, gardener to S. Rucker, Esq., was awarded a special certificate for a remarkably fine specimen of *Odontoglossum pulchellum*; and Mr. Farley, gardener to F. Pryor, Esq., Digswell, a special certificate for a basket of cut flowers of *Thunbergia Harrisii*, most delicate in colour. Messrs. Smith, of Dulwich, received a second-class certificate for *Cineraria Pandora*, and a special certificate for a collection of *Cinerarias* and a collection of *Variegated Zonal Pelargoniums* of much interest. We must take this opportunity of stating that at this early period of the season the Committee decline adjudicating on the merits of *Zonal Pelargoniums*; to do otherwise would be equally unfair to the plants as to the Committee. Exhibitors should remember that this is not the time for judging these plants; it is utterly useless to profess to know from the present appearance of any *Zonal* what it may present in six months' time. The Committee consequently request that all *Zonal Pelargoniums* should be sent later in the season.

Mr. Bragg exhibited a large collection of *Pansies*, rather rough in outline, but sufficiently meritorious to receive a special certificate. Mr. Moore, gardener to the Earl of Shrewsbury, sent a beautiful collection of cut specimens of *Orchids*, which were destined as a present to Her Royal Highness the Princess of Wales, but they were sadly bruised in their journey to Kensington. A special certificate was awarded for a collection of *Orchids* from the Society's gardens.

There were numerous other exhibitors. Mr. Mann, of Brentwood, sent some splendid specimens of his *Zonal Pelargonium*, Lord Derby, but owing to the rough treatment received from the railway porters they were completely destroyed. However, the character of the flower is still first-rate; it is, doubtless, the finest *Zonal* in cultivation. Messrs. Paul & Son, Chesham, sent a collection of spring flowers. Messrs. Henderson, Wellington Road, *Dianthus Mossieux*, and *Zonal Pelargonium Curiosity*; also a new *Orchid*, *Nasomia cinnabarina*. The Committee were rather rebuked by Mr. Bateman in his remarks on this plant not being certificated; but the Committee have their rules, which we think are to be defended. Of the rarity of a plant, or of its intrinsic value, unless specified, what can the Committee know? and if rare and valuable if not effective and distinct, it cannot surely deserve commendation. Mr. Kinghorn sent cut flowers of his beautifully-striped *Azalea Lizzie*. A first-class certificate was awarded this as a seedling plant in 1867, and it maintains its first-rate character.

GENERAL MEETING.—J. Bateman, Esq., F.R.S., in the chair. After a vote of thanks had been passed for several donations of plants, &c., to the Society, twenty new Fellows were elected, and the Harrogate Horticultural Society admitted into union. The awards of the Floral Committee were then announced, and Mr. Wilson, in stating that the Fruit Committee had made none, remarked that at this season, when fruit is very scarce, the inducement of prizes is needed to bring it forward, and that such would be offered at the next meeting. At the last there was a very fine collection of Apples, which gained the second prize, and Mr. Cox, of Redleaf, who exhibited them, had sent a letter which should have arrived at the same time, but did not, informing the Committee that the fruit had been preserved in cork dust. The appearance was excellent, and the flavour in nowise altered. Mr. Wilson added that he had tried the same material with *Joséphine de Malines* Pear, and the fruit so kept was very much better than when otherwise preserved.

The Rev. M. J. Berkeley, being then called upon by the Chairman, said that at the last meeting a very pretty plant was exhibited under the name of *Cypripis Lacourii*, and received a second-class certificate, but he had since found that the plant was very widely distributed over

the world, being found both in the East and West Indies, and in the Society Islands, and that its proper name is *Kyllingia monocephala*. He then congratulated the Meeting on the fine hybrid varieties of *Colens* which had been raised by M. Banse at the Chiswick gardens, and pointed out a curious specimen of *Odontoglossum gloriosum*, in which the flower had two distinct lips, and some *Stocks* exhibiting a malformation similar to that which is so frequent in *Roses*, all the flowers producing a new spike in place of a pistil. A species of *monid* which had all the appearance of a sea-weed, and which Agardh had called *Phycomyces nitens*, was next exhibited to the meeting, and Mr. Berkeley said that having developed itself on barrels of grease in a storeroom in London, he had received some of it, and, being successful in fruiting it, he had found it to be *Macro phycomyces*, which has a very disastrous effect on grease by exhausting all the fatty matters. Examples of the effect of fungi on woods were then shown and among others a section of a trunk of an Elm tree, showing the mycelium on one side, and on the other the fungus developed; also a piece of Oak wood, in which the course of the mycelium was very distinctly defined. An example of *cremactis* was likewise shown, in which the wood had become almost entirely converted into coal.

At the last meeting, Mr. Berkeley proceeded, Mr. Wilson Saunders had made some observations on the very interesting subject of raising *Orchids* from seed. The late Mr. Joseph Henderson, one of the most acute observers with whom he had ever been acquainted, had found at first no trace of an embryo in this class of plants, but one was eventually developed amidst a mass of cellular tissue, and consequently its rudiments must have been there. He (Mr. Berkeley) would advise all who might be desirous to try Mr. Dominy's plan of hybridisation, to endeavour to raise the seeds on wood covered with moss. At the last meeting there was also a bunch of *Grapes*, kept by placing the footstalk in water (see page 222), and the opinion of the Committee was condemnatory of the proceeding, the berries being pronounced vapid and insipid, and he could now advance a reason which did not occur to him at the time. Supposing that the charcoal in the water had the power of absorbing all noxious gases, the water taken up by the stalk would be pure water, not sap; and if by the process of endosmosis and exosmosis it passed into the cells, something would also pass out, and that something in all probability would be saccharine matter. Mr. Berkeley concluded by remarking, with reference to hypocaust heating, that some doubts had been expressed whether noxious gases might not escape into houses heated by that mode, but Mr. Martin had informed him that it was utterly impossible for anything of the kind to take place.

Mr. Bateman said he had a grievance to bring before the meeting. It so happened that ten or twelve years ago he had introduced from the continent a perfectly hardy evergreen Bamboo, called *Bambusa metake*. It would attain the height of 14 feet, and no amount of frost affected its large handsome leaves. Great, however, was his dismay last spring to find that the plants were covered with brown processes, and by no means in a healthy state. This he at first thought was the effect of the winter, but afterwards he found that it was an attempt to flower. On returning from the continent this year he had found the flowering repeated, and he now exhibited specimens in that state. He was very much interested in the fact, inasmuch as no other person's plants, so far as he was aware, had taken similar liberties, but he was inclined to ascribe this circumstance to the fact of his having the plant before any one else, but in a year or two other people might find themselves in the same position.

Mr. Wilson Saunders said that the plant was flowering very freely with him, and had thereby lost a portion of its beauty. He would advise Mr. Bateman to cut it down, and fresh leaves would spring up.

Mr. Bateman said he would put it to the vote that Mr. Saunders should be called upon to cut down his plant first.

Mr. Saunders replied he had already tried that, and with perfect success.

Mr. Bateman, in commenting on the *Orchids*, first referred to *Odontoglossum luteo-purpureum* from the Bishop of Winchester's gardener, Mr. Laurence, and remarked that the Bishop in his long illness had found much solace and comfort in his *Orchids*, and Mr. Bateman felt sure that all would join him in the hope that they might again soon see the Bishop at their meetings, where he had been a constant attendant. Among the *Orchids*, Messrs. Veitch's collection held the first place. The plants of which it consisted were natives of all quarters of the globe, but Africa, including Madagascar and the Mauritius, he thought on this occasion bore the palm. Especially noticeable among the Africans was *Angraecum citratum*, which two years ago was shown in a very small state, but was now much improved. Passing to India, where, in Nepal and the adjoining districts, the head-quarters of the beautiful *Dendrobies* were fixed, we had a *Dendrobium Falconeri*, which Messrs. Veitch were not allowed to carry off from Liverpool for less than £70. With regard to *Epidendrum paniculatum*, it was not very striking last year, and even this its vigour was far from equal to that of wild specimens, but what would it be when it formed one dense panicle of lilac flowers, of which that on the plant before the Meeting could only be considered a branch? An *Angulou* from Peru, with a curiously-jointed lip, was then noticed as remarkable for the movements of that part of the flower when touched; but among splendid plants the place of honour was certainly due to the *Odontoglossum pulchellum* from Mr. Pilcher. Mr. Bateman then took some exception to the Floral Committee's having

passed over *Nasonia cinnabarina*, which not only forms tufts of brilliant vermilion flowers, but is moreover a cool Orchid. A noble lord in his own county, Lord Shrewsbury, or rather his gardener, had sent a collection of cut Orchids, some of which were to be presented to Her Royal Highness the Princess of Wales, and others were to be distributed after the meeting. Among them were *Dendrobium Wardianum*, which was at one time confounded with *D. Falcoueri*. Mr. Marshall had *Odontoglossum triumphans* with twelve flowers on a spike. O. Hallii was flowering very finely with Mr. Rucker, and from his (Mr. Bateman's) own garden there was *Blotia Sherrattiana*. Messrs. E. G. Henderson had sent a fine exhibition of *Trichopilia nanus*, from Costa Rica, and Mr. Wilson Saunders a very interesting collection of that peculiar but very interesting race of Orchids which he delighted to cultivate. *Odontoglossum macranthum hastiferum*, from Lord Lonsborough's garden, Mr. Richards, was also noticed. Mr. Bateman remarking that this *Odontoglossum* had been introduced thirty years ago, but had been lost through not being kept cool enough, but now, through the enterprise of Messrs. Veitch it had been reintroduced. Mr. Bateman added that he had seen it with forty or fifty flowers in a spike.

Mr. Bateman next offered some remarks on *Dahlia imperialis*. About the beginning of last November he reached Cannes, where the climate is so mild that plants from the Cape, Australia, and Mexico may be successfully grown in the open air. On entering Mr. Wolfeld's garden he caught sight of a plant at a distance of 50 or 60 yards, with large French white flowers, which he at first took to be those of a white Lily, but when he reached the plant he found it was a *Dahlia*. He was told it was *Dahlia imperialis*, which had been introduced by a collector named Roezl. Mr. Bateman, in continuation, said that when at Chatsworth, some years ago, he was shown by the former President of the Society, the late Duke of Devonshire, a *Dahlia*, which was expected to grow 30 feet high; but it had never been thought to try it otherwise than out of doors, and nothing more was heard of it. This was twenty-five or thirty years ago, and whether the present plant was the same or not he could not say. Mr. Salter, of Hammersmith however, had visited the nursery of M. Hubert, at Cannes, had there seen it growing 13 feet high, and had introduced it into this country. When he (Mr. Bateman) had seen it an exceptional frost, such as did not occur at Cannes once in four or five years, had curtailed its beauty, of which, however, some idea might be formed from the dried specimen before the meeting, and of which the flowers measured nearly a span across, these being produced in branched panicles of great size; and when in flower this *Dahlia* was certainly one of the most magnificent out-door plants he had ever seen. Having with him a copy of Pritzke's "Iconum Botanicarum Index," he found that *Dahlia imperialis* was figured in "Gartenflora," where there is a very long German account of it, for a translation of which he was indebted to Miss Richards, and a portion of which he would read.

"We openly confess that we read our friend Roezl's first account of this new *Dahlia* with a somewhat incredulous smile, and perhaps the same may happen to many a reader of the 'Gartenflora' when he casts the first glance at the accompanying plate, which shows him a *Dahlia* of a very extraordinary—I might say undreamed-of and surprisingly new appearance; for a *Dahlia* with bell-shaped, white, lilaceous flowers, with a pyramidal, hundred-blossomed, caudal-shaped inflorescence appears to belong, judging from what we have hitherto known of Dahlias, to fairy world.

"To truth, *Dahlia imperialis* appears to be new to the scientific world, for we cultivated several specimens last year in the botanical garden at Zurich, and brought them into blossom, and convinced ourselves that it did not belong to either of the species described in 'Prodrum,' and in 'Walper's Repertorium.'

"Roezl's short and convincing information read somewhat like the following:—This new *Dahlia*, which is imposing even as a leaf plant, will make as great a sensation as the first single *Dahlia* did. It blossoms on pyramidal flower stems, with from 150 to 200 large, white, bell-shaped, nodding flowers, like a Yucca or a giant white Lily. I consider it the most beautiful and valuable of my importations. It will, I hope, completely justify its proud name of the Emperor's *Dahlia*, even in European gardens; and as we (Messrs. Roezl and Besserer) place our entire confidence in it, we try, by representing it at its first blossoming, to make it known. At the same time as this information, which excited our curiosity and expectation in the highest degree, we received at the end of May of last year (1882), a large chest with about two hundred tubers, pretty much like the ordinary *Dahlia* tubers, but of a longer, more stretched-out shape. As the season was already pretty well advanced, they were all immediately planted in the open ground, in groups and beds in the garden, and a large number, on account of want of space, in a poor manured Potato field. All the tubers threw out well, several three or four tubers, which even to the strongest were immediately broken off, and took root more quickly and with greater certainty than tubers of the ordinary *Dahlia* planted at the same time for comparison, which sufficiently convinced us that the *D. imperialis* would support itself and spread rapidly, even if it did not ripen seed. The specimens planted in the garden soon reached the height of 5 to 6 feet, while those in the poorer ground were from 3 to 4 feet. The stately growth, the large, elegantly double, almost triple pinnate, gladsome green leaves make at least as beautiful a leaf-plant as the most beautiful of the *Wiganas*, *Solanums*, and *Nicotianas* at present so highly prized. Singly, in the grass, with well-manured ground, the *D. imperialis* will figure in the first rank as a leaf plant even before its flowering time commences, as it does not lose its lower leaves. As soon, however, as it unfolds its flower panicles, richly covered with large white Lily-bells, it will far surpass the most beautiful of the ornamental flowers which are at present so much liked. We ought not to, neither will we keep silent, that last year (for our impatience can be well understood), we had to wait long, but too long before we discovered the first buds. Not before the middle of October did the longed-for buds show themselves; but now, as by

enchantment, several specimens, the most luxuriant as well as the poorer, were covered with buds; the top as well as the side branches produced whole bunches of buds. There was no longer any doubt that Roezl did not exaggerate when he spoke of 150 to 200 flowers on a panicle, for on our strongest specimen we could show a still larger number of buds."

As to *Dahlia imperialis* ever taking its place as an out-door plant, continued Mr. Bateman, the idea was absolutely preposterous. It must, therefore, be grown out of doors in summer, and moved into the conservatory in September. He hoped that the tubers which he had shown the meeting would, under Mr. Fyles's or Mr. Barron's care, produce flowers before the end of the year.

Major Trevor Clarke said that two years ago he had purchased a packet of seed, said to be that of *Dahlia imperialis*, and whether the continental nurserymen had "done" the English, or the English had "done" him he did not know; but the produce was a common *Dahlia* of the most abominable description, and he could only say, *Caveat emptor*.

The proceedings closed with a vote of thanks to the Chairman, and the announcement that the next meeting would be held on the 21st instant.

THE GREAT INTERNATIONAL EXHIBITION AT GHENT.

(Continued from page 256.)

A VERY large number of new and very rare plants was sent by Messrs. Veitch & Son, Messrs. Lindon, Van Houtte, Ambroise Verschaffelt, Jean Verschaffelt, and a host of other eminent cultivators. These were exhibited in a very long, heated, conservatory-like building, commanding a view of the great hall beneath, and in it were plants enough to fill two such buildings.

In Mr. Ambroise Verschaffelt's collection were *Dioscorea nobilis*, with rich velvety foliage dusted with lemon spots, with a large, broad, irregular, lemon stripe in the centre of each leaf. *Cordylone Guilfoylei*, which is a variegated *Dracena* with pale yellowish white and green leaves. These are two valuable plants. In the same collection was a very pretty and distinct dwarf-growing *Dieffenbachia* named princeps. Mr. Linden had a very interesting group, amongst them *Iresine sp. nova*, a narrow-leaved kind with beetroot-coloured foliage and bright red midrib; *Maranta virginialis* and *Maranta virginialis macrophylla*, the former good, the latter particularly so, and a welcome acquisition. Both partake of the habit of *M. fasciata*, and are very similar to *M. Veitchii* in marking, but lighter in colour. *Cochlostoma Jacobianum* is a very curious plant with *Medinella*-like flowers thrown out from the base of the leaf. *Lasiandra macrantha* is a *Melastomaceae* plant, blooming freely in a small state with rich-coloured *Pleroma*-like flowers. Messrs. Veitch & Son sent a valuable lot of plants. Amongst these were some fine new *Dracenas*, especially *Deunisoni*, *Chelsoni*, *Moorei*, and *Gibsoni*, the latter richly coloured and a fine thing; *Alcacia Jenningsii*, a small-growing species with the foliage distinctly marked with dark velvet and bright green stripes, a lovely plant; the pretty *Primula cortusoides alba*; some handsome *Retinosporas*; *Lomaria ciliata*, a beautiful Fern; *Clematis John Gould Veitch*, double, pale lilac colour, quite hardy and a fine kind; *Dieffenbachias* *Weirii* and *Pearcei*; *Pandanus Veitchii*, an extremely fine thing, beautifully striped with white; *Cinchona* species; some new *Crotons*, *Philodendron Pearcei*; *Hippeastrum pardunum* in flower; a very promising *Apheclaudra*, and other things. In other collections we observed *Curelugo sumatrana* fol. var., a handsome variegated plant, somewhat resembling an *Aspidistra*; several new Palms, particularly *Geonoma Seemannii*, which promises to be as fine as *Verschaffeltii* *splendida* and is distinct. M. Jacob Makoy, of Liege, had some very interesting new plants, amongst them *Panicum plantatum foliis nivo-vittatis*, with woolly green leaves striped with white. *Cocos Weddeliana* is a most beautiful small-growing Palm with delicate graceful foliage; and *Clerodendron Bungeana* variegata, of which several plants were shown, will, if the variegation comes whiter, be valuable, but as exhibited its colours were not clear enough. There was a batch of beautiful *Acer*s in pots, particularly *multifidum*, *multifidum purpureum*, *ornatum*, *Fredrick William*, and *polymorphum sanguineum*, all varieties of *palmatum*. These are all small-growing, cut-leaved kinds, varying in form and colour, and are most valuable for decorative plants, especially for table decoration. A new species of *Pandanus* precisely like *P. elegantissimus* in form, with a strongly-marked glaucous base, promises well, and we noticed two or three forms of this plant in M. Van Houtte's nursery. *Dioscorea sp. nova*, is a very interesting form of the *Sundew*; and *Gloxinia hypocyrtiflora*, a new plant from Ecuador, is much more curious than pretty. *Gymnogramma ramosa cristata aurea* is a crested form of the Gold Fern, which, also, is more curious and pretty. We have noticed what we consider the best of the new plants. There were many other things, but as they are not likely to be popular in England, we pass them by. Some seedling *Begonias* were exhibited, but only one, a seedling of *M. Vandeubeeke's*, which appeared to be a sportive and curious form of *B. smaragdina*, arrested our attention. Two variegated hardy plants but little known, but most valuable, *Hemerocallis Kwano variegata* and the silver variegated form of *Dentzia gracilis*, deserve

to be in every garden. We saw nothing striking in new *Caladiums*. Of the new *Azaleas* and *Camellias* we will speak presently.

A long and spacious room was devoted to *Agaves*, *Amaryllis*, *houquets*, table decorations, &c. *Agaves*, *Yuccas*, &c., many of them of great size and value, and numbering some three to four hundred plants, were exhibited. These are much esteemed on the Continent, but are little valued in England.

What a glorious display of *Amaryllis*!—over four hundred plants, and such variety of colour! Some of the seedlings were grand, and M. Van Houtte has the finest strains. All were grown in small pots and were admirably bloomed, and they must become more popular in England. They can be hybridised to any extent, so as to get perfection in form and colouring. Mr. Charles Turner drew our attention to a small flower, a seedling rich in colour and of exquisite form, but passed over by the Judges. In his hands this and a half dozen others we could have picked out would soon have given birth to some grandchildren!

The *Azaleas*, which, as in our own shows, were the most attractive of colour objects, were smaller than our own, but no less dazzling. Three seedlings, however, appeared very desirable in point of colour, surpassing everything which approached them in brilliancy—namely, *Roi d'Hollande*, a valuable variety of a rich vermilion, spotted on the upper segments, and remarkable for smoothness and substance; *James Veitch*, a most brilliant tint of magenta rose; and *Coloris nova*, a rich glowing crimson, quite distinct and very fine.

New *Azaleas* were, however, so numerous and fine that it is somewhat difficult to tell which were really the best. We especially noticed—*La Victoire*, bright red, with spotted petals; *La Vestale*, shaded lilac pink, fine substance, size, and form; *Thisbe*, bright salmon red, extra fine form; *Meteor*, shaded lilac red, fine form; *Raphael*, a very fine double white; *La Superbe*, intense rich dark orange scarlet, smooth and fine; *Madame Leon Maenhant*, a peculiar shade of red, with rich violet-spotted top petals; *Madame Van der Cruis*, a very large semi-double rose; *Rachel Von Varabagen*, an extra fine single rose; *Gloire Avant tout*, white, and occasionally striped with pink; *Bayard*, a light scarlet, with rosy carmine spots, very fine; *La Déesse*, pale rosy salmon, margined with white, extra fine; *La Paix*, light rosy purple, fine form; *James Veitch*, warm rosy vermilion, extra fine; *M. Thibaut*, rich pale scarlet, fine form; *Beauté Suprême*, pale rose, bordered with white; *Ferdinand Kegeljan*, light orange red, densely spotted in the top petals, extra fine; *Eclatant*, intense dark reddish scarlet, extra fine; *Charmor (Bull)*, rich rosy pink, very fine indeed; *Antoinette Theliman*, rich double scarlet, extra fine; *Roi des Blancs*, an extra fine white; *Charles Albert*, a fine double white; *Frederick II.*, light orange scarlet, extra fine; *Unica*, intense rich glossy crimson; *Reine Marie Henriette*, pale pink, shaded and margined with white, richly spotted in the top petals; and several other fine sorts. A very fine unnamed seedling, double striped white, from M. Van Houtte, is a great advance. A large number of other very fine sorts were shown, such as *Belle Gautoise*, *Madame Camiart d'Hamale*, *Louis Napoleon*, *Cedo Nulli*, *Madame Ambroise Verschaffelt*, *Duc de Nassau*, *Rubens*, and a large number of other Continental and English raised varieties.

The pyramidal form of *Azaleas*, adopted by the English growers (as remarked in our last number), is altogether ignored here, and a more globular form is aimed at. In fact, it may be said that the half of a globe indicates the form of almost all the plants exhibited. The large number of plants exhibited gave, as already stated, a brilliant effect to the Exhibition.

Of the *Camellias* we cannot speak too highly, for almost all were wonderfully fine. The practice adopted here of grafting young plants on to old plants, literally placing young heads on old shoulders, has been the means of showing us the great results which arise from this practice. Symmetrically trained plants of a pyramidal form, close-growing from the bottom upwards, in luxuriant health, and covered with blossoms, were to be seen by the hundred. Many of these were monster specimens, but the freshness of health was everywhere visible. A large number of seedlings was shown, and in one group, exhibited by M. Camilla Van der Bosch, were two very fine things, viz.:—*Prince Royal*, of beautiful form, light pink colour, irregularly blotched with white, and *Eteudard de Flandre*, of exquisitely cupped form and substance, light veined pink, irregularly striped; this is a very beautiful variety. Amongst the best *Camellias* were *Frost's Perfection*, beautiful pinky bluish, shaded with white; *Charmante*, one of *Vervaeke's* seedlings, shaded pink, of fine form; *Comtesse de Flandre*, pale lilac, faintly streaked with pink, fine form; *Victoria Emmanuel II.*, bluish, striped with pink; *Angelo Cocchi*, much lighter than *Lavinia Maggi*; *Madame Ambroise Verschaffelt*, a very fine light striped kind; *Reine des Beantes*, beautiful shaded pink and bluish, fine form; *Leon Legmay*, *Leopold II.*, a superb rich dark crimson; *La Reine*, *Jeany Lind*, *Courtes of Orkney*, *Jubilee*, *Impératrice Eugénie*, *Mathotiana alba*, and many others. Nowhere else could such plants be brought together.

A greenhouse was devoted entirely to *Melocacti*, *Hyacinths*, and *Tulips*; of the former there were four excellent collections. Of *Hyacinths*, there was a very fine display. These were all grown in small pots, and although not equal in size of spike and growth to those exhibited by Mr. Cuttush, Mr. Paul, and others in London and Liverpool, they were a remarkable collection, and there were a large number of fine spikes. Some of the Haarlem cultivators exhibited collections of from 100 to 150 varieties, and all were very creditable.

These collections were very prettily arranged in banks on each side of the greenhouse and looked well. A collection of 125 *Hyacinths* grown in glasses elicited unbounded admiration. They had really been grown in the glasses, and each was a perfect specimen. The Jury evidently thought so, by awarding the first prize to those in glasses. Amongst these we noticed as especially fine—*Double Reds*: *Lord Wellington*, *Milton*, *Jeany Lind*, *Noble par Mérite*, and *Regina Victoria*. *Single Reds*: *La Dame du Lac*, *Agnes*, *Princess Clotilde*, *Dabatsch Sabalskauky*, *Von Schiller*, *Susanna Maria*, *Cavaignac*, *Mrs. Beecher Stowe*, *Josephine*, *Amphion*, and *Macaulay*. *Double Whites*: *La Tour d'Anvergne*, *Jeany Lind*, *Prince of Waterloo*, *Lord Anson*, and *Virgo*. *Single Whites*: *Pucelle d'Orleans*, *Roi Van Nederlanden*, *Hercules*, *La Candeur*, *Reine d'Hollande*, *Mont Blanc*, *Cleopatra*, *Alba Maxima*, *Madame Vanderhoof*, *Alba superbissima*, *Nina*, *Graudeur*, *Merveille*. *Double Blues*: *General Antenk*, *Garrick*, *Bloksberg*, *Van Speyk*, and *Laurens Koster*. *Single Blues*: *Leopold II.*, *Argus*, *Uncle Tom*, *Charles Dickens*, *Couronne de Cèle*, *Prince Albert*, *Nimrod*, *William I.*, *Grand Lillas*, and *Sir C. Napier*. We have named all these, as some may be glad to know what sorts do well in water, but the whole collection was good. So this proves that it is not necessary to have only certain sorts. One exhibitor sent sixteen pans of *Hyacinths*, each containing a dozen bulbs, and they had a very effective appearance. A very large number of new and little-known *Hyacinths* was exhibited. Amongst these were *Pima Donna*, not a new one, but most superbly coloured and grown; *Josephine*, rather thin but most brilliant in colour, rich orange and scarlet; *Goliath*, bluish striped with pale pink, and very showy; *Grand Duchess Olga*, a very pretty pale rosy pink, good spike—all *Reds*. In *Whites*: *Paganini*, *Teneriffe*, *Baroness Swaader*, *Die*, all fine; *Nectar*, a very fair creamy white with large finely-formed bell and close spike; *La Franchise* and *Miss Aiken*, fine. In *Blues*: *Zriny* is fine, dark velvety blue purple, fine close spike; *Emperor Alexander*, a peculiar shade of blue, fine bell and spike; *Julius Cesar*, shaded blue purple, fine close spike; *Prince Alexander*, a very fine dark purple; *Marie Antoinette*, fine; *Prince Bragation*, very fine and distinct; *Czar Peter*, *La Martine*, *Leontidas*, *Pleuveau*, *De Caudelle*, *Louis Philippe*, double; *Tollens* or *Prince of Wales*, *Arnold's Prince*, *Darwin*, *Tomb of Napoleon*, *King of the Blues*, and *Hereditary Prince of Sweden* were all very fine. There was not much new in *Yellows*. *Siberia* is a very fine creamy yellow, and *Lord Seymour* is also very fine, and *Lord Australia* is good. *Chateaubriand* is a very distinct yellow, and *Alphonse Karr* is a pale lemon colour and good. *Hyacinths* were shown in collections of 100 and 150. The display of *Tulips* was also good, and several new and little known kinds were shown. Among the most striking of these were *Leonardo da Vinci*, *La Cavaignac*, *Lac Van Haarlem*, *Rose d'Amour*, *Duc d'Angoulême*, *Duc de Bordeaux*, *Jeanne d'Arc*, *Marillo*, and *La Citrodelle*. In *Singles*: *Rosa Mundi*, *La Poitrin Blanche*, *Graude Blanche*, *Alba regalis*, *Duc de Wiemar*, *Grand Duc or Crown Imperial*, *Archiduc d'Autriche*, *Prince d'Autriche*, *Paul Morelles*, *Duchesse de Parma panache*, *Cramoisi pompre*, *Prince de Joinville*, *Mavrocordato*, and *Joost Van Vondel* are all very fine.

In a large building in the grounds, a quantity of *Rhododendrons* was displayed, and they formed huge banks of colour, but there was a great deficiency of those grand rich scarlets, crimsons, and fine whites which we see at the *Rhododendron* displays in London. *Empeur de Mexique*, conspicuously spotted alike in each petal, truss rather loose and not good in form, is a good variety to cross from. *Baronne Oxy* is another singularly-spotted light variety, not to be confounded with *Baron Oxy*, a heavily-spotted white variety. In this building were groups of hardy *Azaleas*, and what beautiful things they are in pots! forced hardy shrubs, hardy variegated plants in quantity, new *Conifers*, a collection of *Apples* and *Pears*, and a very interesting exhibition of various forms of grafting and budding.

Some forced fruits and vegetables were shown in another department. The *Grapes* were very poor. *Pine-apples* good. *Strawberries* in pots, only middling, and these appeared to have been potted shortly before forcing, for a pencil could easily be pushed to the bottom of the pot. *Chicory* seemed to be the most striking thing in forced vegetables. The *Peas* and *Beans* in pots could be beaten in hundreds of English gardens, and early *Potatoes* were nowhere compared with English growth.

They grow *Mignonette* well. Vigorous plants of the large-leaved kind—and in another mouth or so what plants they will be!—but only one plant in a pot. Then there were collections of *Violets*, hardy *Primulas* in species and varieties, *Cyclameus*, fancy *Pansies*, but very inferior to English raised kinds. Chinese *Primulas*, extremely poor in quality, and Variegated Zonal *Geraniums*, all English kinds, and badly coloured. These seem to be grown in a close house. I noticed a plant or two of *Lady Collum* in M. Ambroise Verschaffelt's nursery, which were beautifully coloured.

And now for the bouquets and groups of flowers for table decoration. The bouquets are enormously large generally, although I have at different times seen many beautiful medium-sized bouquets in the Brussels market, but all that were exhibited were very large—too large, I have always thought; but after seeing Her Majesty and the Comtesse de Flandre carrying bouquets of the same size, I begin to think we make them rather too small. There were several bridal bouquets, one of which was composed entirely of orange buds, not blossoms, each separately wired. The wires are very neatly covered

to resemble green moss, and the buds, although pretty close together are not crowded. I think sufficient fern is not used in constructing these bouquets. The groups of flowers for table (and some of them were very large), were too heavy and formal. The judicious introduction of more foliage and ferns would have relieved this and improved the arrangement. Head-dresses of flowers were exhibited, but were nothing remarkable. The White Persian Lilac and White Dentzia seemed to be valuable for this purpose.

Outside the building, scattered about the grounds, and here and there arranged in groups, were quite sufficient objects of interest to form an exhibition, and of some of these things we will give a brief sketch.

There were stands of garden implements and tools, containing many things which English amateurs and gardeners would hail with delight—pruning scissors and shears of all forms; knives, many of which would not delight us, being too clumsy and curved; garden chairs of every description, and so delightfully easy that a cigar and a snooze became first thoughts; many of these, made of light elastic iron tastefully painted, were more fit for a drawing-room; iron rods, to imitate stakes for Dahlias, standard Roses, &c. Then there were snug, inviting lawn tents, samples of wood latticework, screens for shading houses, or covering fruit trees; also boilers, one form of which I may as well say with Mr. Lane is "my idea" of their idea of a boiler. It is a capital application of a saddle boiler, and in one of your early numbers I will give you a rough sketch of it, and a few remarks. Meantime I would just remark that all the boilers exhibited were deficient in water space, most of them not having more than from 1 inch to 1½ inch clear water space, and corrosion would very soon reduce this. All the greenhouses are made of cast iron, and the arched roof seems to be the most popular. I believe we entertain an unjustifiable prejudice against them, and when speaking about the boiler, I shall worry you with "my idea" of iron houses and garden frames, of which samples were exhibited.

Standard Bays, Myrtles, Box, Orange trees, and all such things, in tubs, are greatly used in Belgium for terrace ornament. Many wonderful examples of these things were exhibited on this occasion. There was a pair of Sweet Bays on short stems, each 12 feet high and as much through, and a lot of others varying in smaller sizes. Then there was a pair of magnificent and bushy Orange trees, almost as large as the two Bays, standard Laurustinus, and a pair of Giant Clethra arborea on stems 7 feet high and 15 inches in circumference, each plant 18 feet high, with handsome heads; small-leaved Myrtles on stems, with heads 6 feet through; a magnificent lot of specimen Aloes, Variegated and other Yuccas; berried Aucubas, three of which were fully 5 feet high and 6 to 7 feet through, all amply testifying that berried Aucubas are grand things and *must* be generally planted.

A collection of standard Bays in pots, showing thirty different designs of twisted stems, indicated marvellous patience on the part of the grower, and formed a novel exhibition. The first thought which occurred to many was that such a process would so check the circulation of the sap as to produce sickly growth. Not so. These plants were very healthy. Two Cupressus Lawsoniana in tubs, each 20 feet high, and perfect pyramids, stood side by side with the monster Wellingtonias in tubs, quite as high. Samples of garden pots, statuary, wirework, and many other appliances for the garden met the eye in every direction. Nor must we omit to mention vines in pots, and a pair of wonderful plants of Phoradendron tenax, 5 to 6 feet high, and about 12 feet through.

Prizes were offered for fifty Conifers, and some extremely fine specimens were shown, many of them from 8 to 16 feet high, and in pots or tubs. M. Gangard and M. Auguste Van Geert both exhibited in this class. There were also two fine collections of thirty specimen Hollies in tubs and baskets. Specimens of various forms of training fruit trees were exhibited by M. Gangard and M. Van Houtte, but why the prize was awarded to the former I am at a loss to tell. Much more attention is devoted to the training and pruning of fruit trees in Belgium than by ourselves.

All that we have now to add is, that we all left Ghent delighted with our visit, and especially with the Exhibition, grateful to our friends there for the warmth of their reception, and all joining in the wish that we may meet there again in 1873.

ENTOMOLOGICAL SOCIETY.

THE second March meeting was held on the 16th of the month at Burlington House, the President, H. W. Bates, Esq., being in the chair. Amongst the new publications presented to the Society's library since the last meeting were Dr. Schaefuss's Memoir on the Scydmaenidae of South America; a new periodical work on the Coleoptera, by Baron Von Harold; and the Zeitung of the Stettin Entomological Society.

A curious Lepidopterous caterpillar from Brazil, forwarded by Dr. Peckholt, was exhibited by Mr. F. Smith. It lives in communities of considerable extent, and has the habit of forming nests as large as a man's head, of a strong woolly texture, in which it resides, upon trees. It has the body covered with long hairy bristles. It was not stated by Dr. Peckholt in what situation the chrysalis state is passed, or whether the caterpillar formed a cocoon within the nest, so that it was not

possible to determine whether it belonged to a diurnal species (butterfly), or to a nocturnal one (moth).

Mr. Stainton directed attention to a memoir by Dr. Hartmann, in which the natural history of three different species of Moths was recorded, belonging to the families Trochilidae (Trochilium cephaliformis), Tortricidae (Grapholitha interruptana, H. Schaff. duplicana, Zett.), and Tineidae (Gelechia sp.). These insects had all been reared from knots or galls on the stems of the common Juniper (Juniperus communis); and Mr. Stainton suggested that by a careful examination of the bushes of that tree in this country it might possibly be discovered that these insects were indigenous.

The President called attention to a general catalogue of Coleopterous insects classified according to Lacordaire's great work, by the Baron Von Harold, the publication of the commencement of which was announced.

Mr. Smith read an article from the "Guardian," a periodical of the last century, edited by Addison, giving an account, extracted from the "Proceedings" of the French Academy of 1713, of the economy of the common garden Ant, which the writer affirmed had the instinct to collect and store up grain for future supplies of food. A marvellous amount of detail was added of the proceedings of a colony introduced into a chamber, not only with reference to the fact of collecting and storing the food, but also of previously preparing it, and regularly airing it from time to time, all which statements Mr. Smith believed to be purely fictitious. Professor Westwood, however, considered that certain well-known facts in the economy of the Ant had been simply misunderstood and misrepresented by the writer. Thus, he believed that the grain stated to have been stored up was the cocoons of the pupae which the Ants often brought to the surface of the nests, and that this biting off the cap of the cocoon by the Ants for the escape of the enclosed insect on its arrival at the imago state had been mistaken for picking out the buds of the grains of Wheat to prevent them sprouting. Mr. Smith further remarked on the want of precision observable in the statements of facts of natural history by various French writers at the present day. Thus, M. Fabre's curious account of the economy of the bee parasites, Sitaris and Meloe, could not be relied upon, as he stated that the young larvae when hatched swam about in the fluid honey stored up in the wild bees' nests; whereas it was well known that these particular kinds of Bees only collect the pollen of flowers for the support of their own progeny.

PLANTS INHALING NOXIOUS GASES.

THE Editors' note at the foot of my article in page 234 reminded me very forcibly of an episode of my school days. A valued monitor, with a view of making a deserved castigation more effective, brought me to the front and administered it as publicly as possible. Still further, that the object of the correction should be lasting, he at the same time surprised me with what was then to me a valuable present. I have oftentimes thought since that this mode of assisting the memory was sound in principle. I am afraid that the castigation and this object of it would have been forgotten long ago but for the present. It is this which brings the whole scene vividly before me. I hope the slight rap on the knuckles which the Editore have been kind enough to bring me to the front to receive, will be supplemented with a present in the shape of the reasons why they "totally dissent" from the theory propounded of plants inhaling noxious gases. This information I shall hail with pleasure, and I believe it would also be acceptable to many others, who, like myself, are unable to lay hands on books which give the true theory of this and kindred subjects appertaining to the work in which we are engaged as the means of a livelihood. I make no pretensions to a knowledge of vegetable chemistry, or vegetable physiology. I rejoice in being a working gardener, rolling up my sleeves on a Monday morning, where they remain until my wife rolls them down again in the washtub; but while I work I think, often to no purpose I grant, and I hope still less to mislead. I am ambitious to the extent of being dissatisfied with an effect unless I can trace the cause. Nothing is to me such hard work as "guess work." To be able to give a reason for every thing I do is the goal at which I aim. I have been led into many difficulties, but never conquered one without finding the next more easy; and so I wade on, sometimes getting out of my depth, but hitherto I have safely reached the shore.

But why dabble in theory? it may be asked. Why not be satisfied with practice? I yield to no one in the estimation in which I hold practice, since it gives me good results; but much so-called practice is after all only false theory. I think there is much force in Horne Tooke's observation, "That he became all the better acquainted with the country through having the good luck sometimes to lose his way." I appear to have lost my way in my article above referred to; but I am in the country yet, and hope to know it the better of my pere-

grinations. The best instruction may often be gathered from mistakes, as the soundest wisdom is gathered from failure.

Since I may appear to have promulgated a theory recklessly and without due consideration, I may, perhaps, be permitted to give a brief *résumé* of my mode of reasoning, which led me to the conclusion which I had the boldness to submit to the public through the columns of the Journal. In respect to inhalation or absorption—for though the terms are different in animal, I have yet to learn that they are not synonymous in vegetable physiology, inasmuch as in the vegetable kingdom both are carried on by the same organs of respiration, while in animals inhalation is by the lungs, and absorption independent of them, except indirectly. Now, as to noxious or poisonous gases, my view is that excess is poison, and therefore noxious. As there is such a great analogy and harmony of operation between the vegetable and animal kingdoms, I think I am not unreasonable if I lay the latter under tribute for examples, and so reason by induction. Excess, then, is poison, both as taken into the system by liquid and solid constituents for its support, and also in the shape of vitiated air or noxious gas inhaled by respiration. In the former I will only instance the common mussel, and in the latter the extrication of a combination of gases, primarily carbonic acid, resultant from the burning of charcoal. A death resulting from either of these is death by poison, and in this case there must be something noxious. Neither is the immediate inhalation of noxious gas absolutely necessary to constitute animal poisoning. By the important functions of respiration the arterialisisation of the blood is effected. This function failing, then commences the work of poisoning by the penetration and circulation of venous blood acting on the nervous and muscular textures of the body, the venous blood itself being a poison of the most deadly kind. This poisoning takes place if the animal is placed *in vacuo*, or in an irrespirable gas, as nitrogen. Suffocation and asphyxia are the terms commonly applied when an animal dies from an excess of noxious gas; but it is in reality poisoned. Here, then, are my reasons for considering excess poison; and if the excess is in a gaseous form, it follows that it must be a noxious gas.

I will now step into the vegetable kingdom. Plants, I assume, possess organs of respiration, by which they inhale or absorb atmospheric constituents for assimilation and support. On the authority of the Editors plants would seem to possess a power of selection, and to apply only those elements which are essential to their welfare. This is new to me, and I do not for a moment hesitate to acknowledge and admit my ignorance. Here they possess an advantage over the animal kingdom. By what law this power of selection is effected and governed I am also ignorant. If by the law of compensation, I should have thought they would have the power to resist excess. This it appears, by that excellent work of reference "The Cottage Gardener's Dictionary," they are unable to do. According to that book, hotbeds sometimes have the air within them contaminated by carbonic acid, causing injury to the plants by an excess of acid which they are not able to digest. "Digest" would imply pre-absorption; if so, it seems to me that they absorb an excess which injures them, which excess of gas is consequently noxious.

During the past summer a gentleman, a few miles from here, in order to destroy the red spider had a quantity of sulphur burned in his greenhouse. This not only killed the red spider but also every plant in the house, and every leaf of the Vines also. My opinion, and I submit it was a natural one, and it was endorsed by able men than myself, was that death here resulted from an excess of sulphurous acid absorbed by the leaves. This appears to be erroneous. Strictly speaking the Vines may be said to have been suffocated, and have died from want of gases which they could not absorb, or by the retention of gases which they could not transpire or liberate. What is this but poisoning by gases previously absorbed becoming noxious, just on the principle of venous blood in the animal becoming poison from not being arterialisised? If a plant like an animal is placed in irrespirable gas, I submit it is to all intents and purposes poisoned by its own constituents previously absorbed by its roots and leaves, and that part of it which is gaseous becoming noxious gas.

I will refrain from entering further into this, as I think I have said enough to make it understood what I meant in my previous article. There I may have wrongly expressed myself, but the results are the same, and are for all practical purposes applicable to the case. In this article I may but have made a still greater parade of my ignorance, and my temerity may be answered by another rap on the knuckles, or, perhaps

this time by the bastinado. Well, be it so; I will try and submit to it peacefully, since I know it will be inflicted mercifully. Feeling that this is a subject not exactly of a kind suited to your columns, I am unwilling to put pressure on space which might be devoted to more practical and matter-of-fact subjects; I shall therefore try and not be tempted to enter further into the matter.—J. W.

[We should, under any circumstances, readily admit our excellent correspondent's explanation; but we do so the more readily because his explanation shows where he was wrong, and why we said we differed from him. He assumed, and still assumes, that suffocation is the same as poisoning. If so, the man who is hung is poisoned! Now, unquestionably, this similarity is not admitted. Suffocation is the exclusion of the gas needful for a plant's or animal's life. Poisoning, on the other hand, is the actual admission of something, whether by root, leaf, or mouth, injurious or fatal to the plant or animal. If a plant is plunged into an atmosphere containing a great excess of either carbonic acid or sulphurous acid, arising from burning sulphur, it is killed by suffocation. It does not inhale either of the gases, and in the case of the sulphurous acid the very texture of the leaves' epidermis is destroyed. The same power of rejection is possessed by the spongioles of the rootlets. It has been shown by actual experiment, that when two or three salts were dissolved in one water and the roots of a plant placed in it, they absorbed one or two of the salts and totally rejected the other. That leaves have the power of selecting the gas or gases beneficial to the plant, has this evidence: M. Saussure grew the Lesser Periwinkle (*Vinca minor*), in a vessel containing, in round numbers, 212 parts azote, 56 parts oxygen, and 22 carbonic acid. The plant absorbed all the carbonic acid, but did not diminish the other two gases.

What is said in the "Cottage Gardener's Dictionary" is in no way contradictory of our opinion. The carbonic acid may be to a certain extent increased beyond the proportion usually present in the atmosphere, and yet be inhaled by the plant, and even with apparent benefit for awhile; but it is injurious if long continued. So in the case of man; he can breathe an atmosphere containing an excess of oxygen. It increases the rapidity of his pulse, intensifies the colour in his cheeks, but hurried respiration, debility, and insensibility soon occur.—*Eds.*]

DOUBLE-BLOSSOMED PEACH FRUITFUL.

I HAVE sent to-day a branch of the double-blossomed Peach for your inspection. We have here a fine standard of it now in beauty, but I have not sent it for its flowering properties so much as its fruiting. Last season I gathered six dozen of Peaches from it all ripe, and several dishes were sent to my employer's table, and pronounced very good.

The tree stands in quite an open situation, but, notwithstanding that, it stood the last frost in May, while others on a south wall lost nearly all their fruit. As I do not think this a common occurrence I thought it might be worthy of notice.—*E. CHITTY, Catlands Park, Waltham-on-Thames.*

Although more numerous petalled than is usual in a Peach blossom, yet each flower of the specimen sent has perfect stamens and pistil. We once had in Essex a maiden seedling standard Peach tree, and it bore fruit for several years.]

PROPAGATION OF CENTAUREA CANDIDISSIMA.

Any one without difficulty may secure a stock to propagate from, by taking up in autumn as many plants as will be required for cuttings, and treating them in the following manner: Lift the plants by the end of October or early in November, pick off the dead leaves, and pot in soil consisting of about equal parts of loam and dung from an old Mushroom bed or hotbed, with a little sand. Then water them, place them in a lateinery or Peach house, and through the winter treat like Scarlet Pelargoniums.

About the middle of January place them in a warmer situation to produce growth for propagation. As soon as they are growing freely pick out the tops; they will then push numerous side shoots, which will be fit for cuttings by the beginning of March—quite soon enough to begin; and if the following directions be adhered to no difficulty will be met with in obtaining by the end of May a fine stock of plants for bedding-out or for pot culture.

Into saucers such as are in use in most gardens put about

three-quarters of an inch of clean sand, pour warm water on it, stir up and give it a shake, and drain off the water till the sand is firm enough for the cuttings to stand in. Next pull the cuttings off the plants, not cut them off, and stick them in the sand, the largest in the centre. The saucers I use are 4 and 5 inches in diameter, and hold from twelve to sixteen cuttings. Plunge them to the rim in a hotbed or propagating case, where the bottom heat is from 70 to 80, and the cuttings will be fit to pot-off in ten or twelve days. They should then be potted into 2-inch pots. Mix equal parts of rotten dung and loam with a little sand, riddle it through a half-inch sieve, and use the largest for drainage and the fine for potting with. Keep the young plants in a warm house till the roots show at the bottom of the pots; they will then be fit to shift into 4 or 5-inch pots, using the same kind of soil. Kept in a cool place, such as an orchard or Peach house, they will be fine plants for bedding-out by May.

A few plants grown in larger pots will form fine subjects for decoration in-doors, and cuttings afterwards. The cuttings will not want watering during the time they are striking; merely sprinkle them through a fine rose in favourable days.

In turning out the plants, strike the edge of the saucer on the potting bench to loosen the sand, so as not to break the roots.

Not one cutting out of fifty will fail to strike root by this method. I am aware that striking cuttings in sand and water is not new, having been fully described by Mr. Beaton four or five years since as practised extensively by Mr. Kidd, of Bushy Park.—J. T. CUREN, *Gardener to F. Swarwick, Esq., Whittington House, Chester* told.

SNAKES AND ADDERS.

CAN any of your readers inform me whether there is any means, by poison or otherwise, of destroying or driving away snakes, and especially vipers? My garden is infested with both; and it is scarcely possible, owing to the vicinity of a pond and shrubberies, with stony ground and thick underwood, to clear their haunts.—H. R.

[We are not able from our own experience to advise you as we would wish, but were we so situated we would poison some frogs and strips of fresh meat, and lay them carelessly and liberally in the haunts of the vipers and snakes. We recollect of a case, but not so bad as yours, and where, also, there was a small piece of water, about which and the lawn close to it they became a dangerous nuisance. In spring a few heaps of stones were thrown together, leaving open interstices between them, in which moss was lightly placed. As expected, the snakes made these heaps their home, and when they became pretty well colonised, a fire of brushwood, with sulphur sprinkled on the wood, was placed round them, and hundreds were thus destroyed. We shall be glad if some correspondent will give better information and advice.]

EMIGRATING.

YOUR correspondent, "W. T. G." (see page 201), draws a very dismal picture for intending emigrants to the British North American colonies and the United States, a picture enough to deter the most stout-hearted of the ill-paid English gardeners from attempting to better their condition by emigrating to that country.

Without disputing anything "W. T. G." has said, I wish to draw the attention of intending emigrants (of course I mean my brother horticulturists and farmers), to a British colony, where the cultivator of the soil will find very few of the long list of drawbacks detailed by "W. T. G.," I mean Queensland, one of the Australian colonies. There the emigrant need not fear the uprooting of his vines and fruit trees in winter, as frosts are unknown in that favoured country. The climate very much resembles that favourite resort of our invalids, Madeira, being only a few degrees warmer in summer and a few degrees colder in winter. The soil and climate are admirably adapted for the growth of all tropical and subtropical plants. The following is an extract from a book written on Queensland by the Rev. Mr. Wight in 1861: "On the same farm you may see growing Maize, Peas, Potatoes, Oats, Coffee, Sugar Cane, Arrowroot, Ginger, Flax, Cotton, Peaches, Oranges, Apricots, Figs, Mulberries, Grape Vines, Pine Apples, and Bananas. All these may be seen growing to perfection in the open air, and under ordinary treatment in the neighbourhood

of Brisbane. Land is cheap; you can have your pick of the agricultural reserves for £1 an acre."

After what I have said, I need only say that I would advise all cultivators of the soil, that think of emigrating, to go to Queensland. I may add that the colony is rich in minerals, and gold is found abundantly in the northern parts. J.

The only comment we shall offer are the following lines, written by an emigrant:—

"Come, boys, I have something to tell you;
Come near, I would whisper it low—
You are thinking of leaving the homestead
Don't be in a hurry to go!
"You talk of the mines of Australia—
They're wealthy in gold without doubt;
But, ah! there is gold in the soil, boys,
If only you'll shovel it out.
The mere outside trade is a hazard,
The goods are first high and then low;
Better dig the old soil a while longer
Don't be in a hurry to go!
"The great busy West has inducements,
And so has the busiest East;
But wealth is not made in a day, boys—
Don't be in a hurry to start;
The bankers and brokers are wealthy,
They take in their thousands or so—
Ah! think of the frauds and deceptions—
Don't be in a hurry to go!
"Home soil is the safest and surest,
The orchards are loaded to-day,
You're as free as the air of the mountains,
And monarch of all you survey.
Better stay on that soil a while longer,
Though profits come in rather slow;
Remember, you've nothing to risk, boys—
Don't be in a hurry to go!"

A WORD FOR AMARYLLIS CULTURE.

AMONGST plants really worthy of cultivation there are very few more deserving of patronage than the Amaryllis family; occasionally we see a solitary plant in flower, but we hardly ever find these plants grown in quantity, or in proportion to others. We see in collections dozens of Azaleas, Pelargoniums, and kindred plants, but seldom a fair proportion of Amaryllises. I often regret that this omission should be so general, because wherever a good collection is kept, and well bloomed and judiciously mixed with other conservatory plants, the Amaryllises contribute a peculiar stateliness and diversity which enhance the beauty of the collection.

It is not, however, in the spring solely, that plants of this charming family develop their beauties, for they can be had in bloom all the year round, by a little adjustment of rest and action. I need hardly say that if they are fit associates for Azaleas, and are undimmed by the dazzling brilliancy of these, their presence must be always welcome.

In point of colour there is a wide field for selection. From *Reticulata rosea*, a chaste white, most delicately pencilled with faint rose, we may select still higher and brighter colours in the *Vittata* and *Marginata venusta* section, white and scarlet. From these we may pass on through the *Johnsoni* section, and find ourselves in company with the self-coloured ones. Amongst these may be found a brilliant and most beautiful array of colour, from orange to the darkest maroon. Some of them are most deliciously sweet, quite equal to any flower in cultivation in point of aromatic perfume.

When a very fine display is desired, from two to six bulbs should be planted in one pot. If the bulbs are equal in point of size, and have been grown and rested similarly, then when started into growth, most probably every bulb will send up a flower spathe, and very often two spikes to each bulb will be the result. We have often produced ten spikes in one pot, with from four to seven blooms on each, and when such a display is secured and well developed, there is hardly a plant of any description that can surpass the Amaryllis. For large conservatories, and for contrast with Azaleas, I can recommend specimen Amaryllises. Like other plants, their rest can only be estimated when seen as above grown. They are, nevertheless, very effective in single bulbs.

I find it a good plan in practice to treat them liberally. When potting I give good shafts with plenty of drainage, and use turfy loam and leaf soil in equal proportions, with a small mixture of peat and sand. They should be started in heat, when in bloom placed in a cooler atmosphere, and when out of bloom they should have more heat, and exposure to sunshine, gradually withholding water as the plant completes its growth. It should then be allowed to go gradually to rest, removing the

foliage only when it withers. By adopting this plan bloom is secured to a certainty, and the bulbs do not degenerate under such treatment. I have bulbs now which have bloomed here for sixteen years. I commenced with about a dozen different varieties, fertilised them, and raised hundreds of seedlings. I like the old *Aulica* for this purpose, and think that the seedlings from it are particularly strongly constituted—so much so, that they will grow and bloom in an ordinary greenhouse. Their defect consists in a tendency to produce but two blooms like the parent, while it is most desirable to secure those capable of bearing a larger number of blooms on a spike. It takes three or four years to make blooming bulbs from seed.—WILLIAM PAYNE, *Fir Vale, Sheffield.*

FLOWERS TOO MUCH NEGLECTED.

I CANNOT refrain from noticing a few that deserve a little more attention than they are receiving. What can be more attractive at this season than pyramids 6 or 8 feet high of *Ribes sanguineum* and *sanguineum album*, clothed from bottom to top in their distinct colours? or they may be grown not as pyramids, but as bushes. Then, what splendid pillar plants are the two varieties of *Cydonia japonica*, the one white the other scarlet, almost too bright for the eye to rest upon in the full sunshine, such as we have been enjoying of late. They are likewise suitable for training against a wall or fence. Let us next look at those fine old sorts of double Wallflowers, of various colours, but the bright yellow outshines them all. What can be more pleasing than a bed or edging of *Erythronium dens-canis* with its white and purple flowers and its spotted leaves? and bright-coloured *Hepatica triloba*, single and double, of various hues? There is also *Bellis aeneuifolia*, an acquisition either in-doors or out. Another of our little stars that is creeping into favour is *Aubrietia deltoidea variegata*; for either rock-work, edging, or patchwork, it deserves a place in every collection. Last, but not least, let us admire *Saxifraga oppositifolia*, with alba and major in contrast. They are really gems of the first water when taken care of, forming splendid edgings, or, shall I say, carpets of pink and white blossoms, well repaying any amount of care bestowed upon them.

LIST OF PLANTS IN BLOOM.

March 2. <i>Crocus vernus</i> (blue, white, striped, and purple).	March 18. <i>Acer rubrum</i>
Cloth of Gold	<i>Alnus glutinosa laciniata</i>
<i>Ulmus montana campestris</i>	20. <i>Berberis empetrifolia</i>
<i>Populus tremula</i>	<i>Comptonia asplenifolia</i>
6. <i>Aubrietia deltoidea</i>	<i>Kerria japonica</i>
<i>Ribes sanguineum</i>	<i>Polyanthus Fire King</i>
<i>Viola odorata plena</i>	<i>Populus alba argentea canescens</i>
<i>Primula vulgaris</i>	<i>Salix helix</i>
<i>Erythronium dens-canis</i>	<i>Lambertiana prinoides triandra</i>
<i>Pulmonaria officinalis</i>	<i>Vinca major minor</i>
10. <i>Apricots</i>	24. <i>Hyacinthus orientalis botryoides</i>
<i>Veronica hederifolia</i>	<i>Narcissus pseudo-narcissus biflorus odoratus</i>
<i>Anemone hortensis</i>	<i>Van Thol Tulips</i>
<i>Tussilago farfara</i>	<i>Primula cortusoides vulgaris</i> , varieties
<i>Asarum europæum</i>	Daisies
<i>Aubrietia deltoidea variegata</i>	28. <i>Amygdalus communis dulcis incana</i>
<i>Malcolmia maritima</i>	Wallflower, double yellow, dark crimson
16. <i>Larix europæa</i>	30. <i>Berberis aquifolium</i>
<i>Prunus spinosa</i>	<i>Peaches</i>
<i>Potentilla fragaria</i>	<i>Nectarines</i>
<i>Cydonia japonica alba</i>	<i>Plums</i>
<i>Pulmonaria pinnatifida</i>	<i>Pears</i>
18. <i>Ruscus aculeatus</i>	<i>Cherries</i>
<i>Buxus sempervirens</i>	<i>Picaria ranunculoides alba</i>
<i>Anemone nemorosa plena</i>	
<i>Gentiana acandis</i>	
<i>Corydalis bulbosa</i>	
<i>Saxifraga oppositifolia alba major</i>	
<i>Scilla bifida</i>	
<i>Tussilago alpina</i>	
<i>Viola odorata plena canina alba</i>	
<i>Acer dasycarpum</i>	

—M. H., *Acklam Hall, Middlesbrough-on-Tees.*

SCALE DESTROYED BY PARAFFIN OIL.

I HAVE been trying experiments on the best way of destroying scale, using a great many different applications with various results; but a short time ago I met with something by accident which I do not think has been tried before. I have a large

Fern case heated by hot water, and I use a paraffin lamp under the boiler. After filling the lamp one morning I happened to find a scale on a Fern frond, and in taking him off I used my finger which had come in contact with the oil; he came off much quicker than usual, and it immediately struck me that the oil had something to do with it. I therefore took some oil, and going into one of the hothouses used it on a young Orange tree with scale on it. The scale all came off with the slightest touch of paraffin, and the plant does not look any the worse of the oil. I am going to try it on one or two Ferns. Our gardener says that he never saw scale come off so quickly. I think I will try the vapour from paraffin on some young Ferns when I can find any with scale on them.—THOMAS CLAY.

[We shall be obliged by a statement of the results of your experiments.]

BAG-HOLDER AND TUNNEL COMBINED.

THE engraving represents the simplest, most convenient, and altogether the best arrangement for holding bags while filling with grain, meal, or anything else put into bags. It consists of



a metallic tunnel, to which are attached four steel hooks, which hold the mouth of the bag distended in such form as readily to receive the grain from the measure or shovel without the inconvenience of filling the bag alone.—(*Prairie Farmer.*)

GREEN FLY ON FRUIT TREES IN BLOOM.

Our orchard-house Peach and Nectarine trees have been, and still continue to be, much infested with green fly, and the insects, in spite of all that we have been able to do to destroy them, seem to be as numerous as ever. Having already destroyed nearly all the blossoms, they now seem to threaten the young shoots with the same fate.

We have an old viney 40 feet long by 15 wide, and the Vines being worthless, we cleared them away. The idea of experimenting with a few orchard-house trees having occurred to us, we commenced with ten Peach and Nectarine trees, and by following up Mr. Pearson's directions as closely as our circumstances would permit, we succeeded in ripening a tolerably fair crop of fruit last year, which circumstance induced my employer to increase the number this year to thirty-two, including Apricot, Plum, Cherry, Apple, and Pear trees.

The trees which fruited with us last year ripened their wood well, and having been carefully stopped, were in point of appearance all that we could desire in respect to fruit and wood buds; indeed, a month ago they looked the very picture of health, but within the last three weeks the green fly attacked them, and by its ravages has given us great uneasiness, and caused us to entertain grave doubts as to whether it is possible to keep Peach trees free from green fly under certain circumstances. Mr. Pearson says, "The green smother fly must be got

rid of;" but how, is another story. We have not a house on the place that is anything like smoke-tight, so with us fumigating is almost out of the question. Syringing with tobacco water or quassia mixture is impracticable with trees in full bloom. Brushing off the aphides with camel-hair brushes dipped in tobacco water has been carefully resorted to by the young ladies with the most praiseworthy perseverance, but as fast as the trees are cleaned they become covered again, and as a last resort I write to you for advice, as we are at our wits' end. Our Apricot trees, which are arranged amongst the infected Peach trees, are all right, being well sprinkled with fruit; the Cherry and Pear trees are also looking well. The green fly has attacked some of the Plums, and something not unlike mildew has appeared on the Apples. Now, we want to know whether it is possible in our case to ward off the attacks of green fly by previous manumgement, without being obliged to have recourse to much fumigating and such like doctoring whilst the trees are in bloom? because if orchard-house trees are so very liable to be so terribly injured, and the means of prevention so difficult, our hopes of success will be as much impaired as the health of the trees by the blight.—DILEMMA.

[We have known cases quite as bad followed by great success. There is nothing in the house to prevent your being quite successful. One thing you seem to have omitted, and that is washing the trees in autumn and winter; this should always be done in the way of preventive. Most likely if with a brush you had washed the trees with warm soap water, or syringed them well, and then painted them with weak Gishurst, or even with a paint of sulphur, clay, lime, and soot, so thin as to work freely, you would not have been so troubled, though you might have had some green fly. This season we drew merely a little limewash over our trees, and we have not noticed insects as yet on more than half a dozen shoots, but we have had them years ago in abundance. With the trees in bloom, and the insects so clustering round the bloom, you can do little good with washing or brushing.]

The openness of the house is not favourable for fumigating, but not so much so as to prevent that proceeding being successful if you cover the roof with cloth or mats, and keep them wet. We have smoked such open-glazed houses with the aid of the garden engine alone, playing on the roof all the time, and the water thus filling the spaces of the laps. If for want of cloths you could lay hands on some rough hay or straw in a mild day to cover the roof, and use the water engine freely, you will find the smoking very effectual, but you must not give it too strong. The roof should be slightly shaded for a few days, and then the smoking should be repeated, and after that we should hope that syringing would keep all right. After the second smoking you had better shade a little for a few days.

The simplest mode for temporarily shading would be to scrape down the size of a walnut of fine whitening into three or four gallons of water, and then with a syringe throw it nicely over the roof; the first shower will wash it all off, and then shading will not be needed. Of course it will not be needed in dull weather; but in such weather as preceded the 4th of April it would be wanted, otherwise the blossoms would suffer. We say again, "Never give up," you will yet succeed to your own satisfaction. See "Doings of the Week."

NOTES AND GLEANINGS.

With the view of assisting the EDUCATION OF YOUNG GARDENERS, the Council of the ROYAL HORTICULTURAL SOCIETY have made arrangements through the Department of Science and Art for the formation of a Drawing Class at Chiswick. Until the class becomes too large for the room available, the lessons will be given in the Garden of the Society on the Wednesday evening of each week, excepting in August and September, between the hours of seven and nine o'clock. Arrangements have also been made for giving a course of twenty lessons in Surveying, on evenings, of which due notice will hereafter be given.

The fees for the Chiswick students will be paid by the Society, and also the cost of all models and examples for instruction, but the students will have to provide their own drawing materials. A limited number of other young gardeners, well recommended by their employers, will be admitted to these classes on a payment of a fee of 5s. per subject for a session of twenty lessons; they will also have to provide their own drawing materials.

The subjects of instruction will be—Free-hand Drawing,

Model Drawing and Sketching from objects, Geometrical Drawing, and Elementary Design as applicable to Landscape Gardening; Land-measuring, including levelling.

The Drawing class will commence its work on Wednesday, April 8th; the Surveying class in May. All applications for admission to the classes are to be made to Mr. James Richards, the Assistant Secretary of the Society.

—We are authorised to announce that the Council of the Royal Horticultural Society have decided on offering for sale by auction the splendid collection of twelve varieties of NEW HYBRID COLEUS, raised in the Society's garden at Chiswick, and that the sale will take place at the rooms of Mr. J. C. Stevens, King Street, Covent Garden, on Wednesday, the 22nd inst. We cannot commend too highly this step, which will permit these beautiful plants to be at once put in trade, and will enable the public generally to participate in the possession and enjoyment of a set of the finest decorative plants which have been introduced of late years.

—On Thursday last, the 2nd of April, Her Majesty, accompanied by Princess Christian and Prince Leopold, visited Mr. WILLIAM PAUL'S SPRING SNOW at the Royal Horticultural Gardens; and on inspecting the flowers, Her Majesty was graciously pleased to express her gratification, and requested to be furnished with copies of Mr. Paul's works on horticulture, which were at once supplied.

—THEIR ROYAL HIGHNESSES the Duchess of Cambridge and the Princess Mary of Teck honoured Messrs. Veitch & Sons by visiting the Royal Exotic Nurseries, Chelsea, on the 1st inst., and spent considerable time in inspecting the plants, &c.

—We are glad to see in our advertising columns that the inquiry of "L. M. N." has aroused attention to the query, "Where are FLOWER POTS to be had?" Knowing that so much importance attaches to the quality of the pottery used, Mr. Collier has for some years been unsparing of expense and labour, both in the selection of suitable material for and in manufacturing garden pottery.

—THE Twenty-fifth Anniversary Dinner of the GARDENERS' ROYAL BENEVOLENT INSTITUTION has been fixed for the 24th of June, and M. T. Bass, Esq., M.P., will preside upon the occasion.

—ON the 28th of March, at Brighton, in the eighty-eighth year of his life, died EDWARD JESSE. Gardeners and naturalists are the children of age, and truly marked as those "long walking hand-in-hand with time." He had retired from public life about five years since, but retained his characteristic blithe and candid spirit to the last. The following biographical notice is extracted from "Men of the Time."

"EDWARD JESSE, son of the late Rev. William Jesse, Vicar of Hutton Cranswick, Yorkshire, and subsequently of Bewdley, Worcestershire, was born at the former place in January, 1780. He was educated privately, and at eighteen years of age entered the public service as a clerk in the St. Domingo office. He next became private secretary to Lord Dartmouth, while President of the Board of Control, and when that nobleman became Lord Steward of the Household, he obtained for Mr. Jesse the court office of Gentleman of the Ewry. Mr. Jesse subsequently became Controller of the copper coinage issued by Messrs. Boulton & Watt at Birmingham. About the year 1812 he was appointed a Commissioner of Hackney Coaches, and soon afterwards Deputy Surveyor General of the Royal Parks and Palaces. This post he held, together with his office at Court, until 1830, when both offices were abolished, and he retired on a pension. Mr. Jesse is the author of 'Favourite Plants and Rural Studies,' 'Gleanings in Natural History,' 'Anecdotes of Dogs,' and editions with notes of 'Izaak Walton's Angler,' and of 'White's Selborne,' published in one of Mr. Bohn's series in 1819; an edition, much enlarged, of Ritchie's 'Windsor Castle,' 'Lectures on Natural History,' &c. His eldest daughter, Mrs. Houstoun, is the author of 'Hesperos, or Travels in the West,' a work most favourably noticed by Lockhart; 'Texas and the Gulf of Mexico;' and also of some novels, including 'Recommended to Mercy,' 'Such Things Are,' &c.

Mr. Jesse's son, John Heneage Jesse, is favourably known as the author of several historical and biographical works.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Broccoli, all the varieties require a deep rich soil, and the ground should be trenched to the depth of at least 2 feet, incorpo-

rating with it as the work proceeds abundance of rich manure. The early varieties, such as the Purple Cape, Grange's White Cape, Walcheren, &c., should be sown from the middle of this month to the middle of May, according to locality; and a second sowing of similar kinds should be made about a fortnight after the first. These will succeed the Cauliflowers, and will carry the supply on to Christmas. Two or three sowings of Snow's Winter White put in from the beginning of April to the middle of May will keep up the supply until the Sprouting varieties are ready, and these again till the spring kinds come in. *Carrots*, sow now the Covent Garden Long Surrey, the longest and best for a main crop. Sow in drills 12 or 15 inches apart, covering the seeds evenly to the depth of about half an inch. *Cucumbers* (Ridge), sow now in pots or pans filled with light soil, covering the seeds about half an inch, and set in a Cucumber frame or any other place where a moist gentle heat is maintained. As soon as the plants have made their seed leaves, and before they become drawn, shift them into 5-inch pots, putting two plants in each, and replace them in a warm moist situation. To keep the plants dwarf and stocky place them near the glass, and when they are established and moderately strong gradually admit the air more freely, and endeavour to have them well prepared for planting-out by the middle or end of May. *Lettuce*, sow for successional crops in beds of well-pulverised soil at intervals of about a fortnight until the end of July. *Saroy's*, a succession may now be sown. *Turnips*, sow a small breadth of the American Strap-leaf, a sort superior in flavour and quick in growth.

FRUIT GARDEN.

Newly planted trees will require to be well watered in this dry weather, and afterwards mulched. Both Peach and Apricot trees will now require partial disbudding, removing only a few shoots at a time, that the flow of sap may not be checked. Pick out the points of strong shoots, which will ensure healthy bearing wood.

FLOWER GARDEN.

The necessity of strict attention to the watering of newly planted trees and shrubs cannot be too much insisted upon; and the watering should not be a mere wetting of the surface of the soil, but a thorough drenching to the depth of a foot or 18 inches. Proceed with the hoeing and raking of borders, and throw a little Mignonette or Sweet Alyssum seed in all bare places. The time will not be uselessly spent in eradicating Plantain and other broad-leaved weeds from the lawn. Attend to mowing and sweeping, and keep every part of the garden clean and neat. In mowing the American garden mulch the beds with short grass; this not only prevents the parching-up of the soil, but the grass, when decayed, is an excellent manure for the plants. Put in the seeds of biennials as soon as possible, sowing them in drills 9 inches or a foot apart, and covering them with rich soil. Stocks, &c., in the seed beds are now becoming crowded, therefore take advantage of the first shower to transplant them. Some of the earlier kinds of Tulips are putting up their buds. This is a critical period, for heavy rains are often succeeded by frosts, which congeal the water retained by the leaves, and consequently the future blooms are surrounded by a mass of ice to their certain injury. Some florists draw out the water with a syringe, others on hands and knees make the circuit of their beds, blowing it out with their mouths. Whatever means, however, may be adopted, the moisture must be removed. Pinks are on the move, and must be attended to; these when planted in the spring seldom lace well.

GREENHOUSE AND CONSERVATORY.

Where the supply of plants in the conservatory is limited, you must make the best of their bloom by slightly shading them in fine days, although doing so is not good for young growths. Have cuttings of *Pelargonium Album multiflorum* put in now for flowering next November. *Fulgoria* is the best of all the late Roses for flowering in November and December; it continues in bloom till the forced ones come in. Now is the time to obtain a reserve stock of *Heliotropes* for forcing next winter. It is also a good time to put in cuttings of *Plectotes* for forcing after Christmas. If you wish to have a good stock of the plants named you must prepare always six months in advance. The increased heat of the greenhouse is not intended to be by fire heat, but by giving less air, and shutting up the house early in the afternoon, when a moderate use of the syringe may safely be practised. Every plant that is intended for a specimen should have the best place in the house, and should be turned round twice or thrice a-week; the shoots should be stopped from time to time, and it should have free-

dom on all sides. Epacris and early spring Heaths will bear close-pruning after they have done flowering. Correas that have been flowering should now be rather closely pruned and kept in-doors all summer, when they will take the place of Fuchsias after September. *Luculias* that have been at rest since flowering are now beginning to grow again, and should be kept in a low moist atmosphere till all the eyes break forth. Forcing the *Luculia* at this stage, or even encouraging it to make an early growth, was the principal cause of its failure on its first introduction.

STOVE.

Now that the plants are taking hold of the fresh soil more air may be allowed them, but shut up early in the afternoon, and when the watering is finished give them a good syringing overhead. Be sparing of fire heat after this time, even although the thermometer is down to 55° in the morning. The fine weather we have experienced, hot dry days and cool mornings, ought to teach us how to regulate the temperature for our house plants. The last portion of the *Gesneras* and *Acimenes* should now be potted, as they can hardly be safe any longer in their dry state; but to have them late in September and October they must be kept back till about the end of May in a cold pit, allowing them no more water than will keep the soil from being quite dry. There is more merit in retarding plants properly than there is in forcing them into early bloom.

FORCING PIT.

Hedychiums to flower late in the summer may now be started, and another batch of *Tuberoses* put in for succession. *Primula sinensis* for flowering from September should now be little stocky plants fit to be placed out in cold close frames by the middle of May, and more seeds of it should now be sown. *Gesnera zebrina* and *longifolia*, both tall flowers, should now be pushed on by all the heat and moisture at command.

PITS AND FRAMES.

The most forward of the *Hydrangeas* now in bloom must be hardened off preparatory to being bedded-out; and Stocks and other plants blooming in pots may now be removed to the flower garden, taking care to have mats at hand to cover them in case of severe frost. Most of the plants for bedding-out may now be removed to temporary pits, or placed in sheltered situations; and if the pots are wanted a number of the more hardy may be plunged in light sandy soil. Now is a good time to divide the stools of *Chrysanthemums*, and cuttings should be put in of those that are scarce.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Such a week of scorching days and clear cold frosty nights. The lawns and pastures have scarcely made any progress for ten days. In the belief that changes were approaching, opportunity was taken of the open dry weather to forward some kinds of work.

First of all, a regular hoeing and stirring was given among all young growing crops; Cauliflowers and forward Cabbages were assisted with some manure water, and, the former especially, mulched with rotten dung. Peas were sown and Broad Beans planted, and Lettuces hardened-off for planting, as when very small they are so apt to be carried off by the birds. Potatoes were planted to succeed those in frames and earth beds. Spinach was sown for succession. *Dwarf Kidney Beans* were sown in pots to be partly transferred to other pots, and a few to a sheltered place in a few weeks, as at the foot of a wall. What with damp and vermin we did not save a seed last season, and good seed of many sorts is scarce this season. For general cropping in-doors and out we prefer the China Dwarf, or the Robin's Egg; but we must do without it this season. The creams and the yellows produce fine pods. There is a prejudice against those whose pods are mottled and speckled; but we never found anything the matter with the flavour of them. The Newington Wonder is very good when the small pods are gathered young and cooked whole. Sowed Scarlet Runners in some leaf mould, where they can have protection. The ground being dry, rolled that on which Onions and Carrots had been sown, so as to give a firm surface. A skiff on the surface with a Dutch hoe when the seedlings are all up will prevent cracking and gaping in our stiff soil.

Pricked-out, or rather planted, a bed of Celery under glass that had been previously pricked-out. This will come in early when transplanted into trenches. Would have pricked-out lots of Celery, Cauliflower, Cabbage, &c.; but the weather was very

favourable for out-door work, and much of such pricking-off work can be done in a dull or wet day. By so contriving, a wet day is generally one of our busiest days. Sowed a portion of our Winter Greens—Borecoles, Savoy, Brussels Sprouts, and Broccolis, and will sow the rest in a fortnight or so. The ground, rather rough, was broken, rolled, and raked, the seeds sown, and the surface beaten with a spade, then, as the weather was dry, slightly watered through a rose, and shortly afterwards covered with a sprinkling of riddled fine soil from under the potting benches, and at once netted to keep the birds away. In this way all the refuse from pot plants comes in useful for such general purposes. Being dry it does also for mixing with stronger soil for Potatoes in frames, &c. It is of much importance to have a quantity of dry soil to go to in winter and spring.

The weather being so bright, most of the crops under the protection of glass, as Radishes, Lettuces, Potatoes, &c., wanted watering; and we would have preferred to have given them water a little warmed instead of at the natural temperature. We should have had great difficulty in helping ourselves from the pipes in our houses, as, owing to the heat of the sun, the pipes were comparatively cool. Wherever glass as a covering can be secured, a considerable acceleration to all crops can be given when, in addition to storing up the sun's rays, the help of warm waterings can also be afforded. Much of the waterings in spring with cold spring water does harm instead of good. Even in bright weather it would often be better to surface-stir and mulch. Heated water would warm the soil instead of cooling it.

FRUIT GARDEN.

Finished all pruning, and will finish the nailing as soon as we can. The birds having commenced on our dwarf Apple trees, we have had them all syringed with lime and soot. If we can keep the birds off a short time longer they will be all right. Our Gooseberries are safe now, and green enough to resist a rather sharp frost, and we have just thinned them, as we have long given up pruning in winter. We wait now until we see whether the birds or we are to have the mastery. This season we have no reason to complain. Currants we have been obliged to colour like the Apple trees, as the birds, having missed the Gooseberries, seemed bent to be revenged on them.

Strawberries.—Ran the hoe between the rows so as to cut up anything that might be coming, and ere long will rake off the roughest part of the manure placed as surface-dressing. Presently we will plant-out the plants that were forced earliest. Plants in pots have needed much water, and even the latest of them are now showing well, ready to go where an opening with plenty of light can be given to them. Amongst a great number we find a few very strong plants of various kinds that have shown, and will show, no flower truss, and these we have turned at once to the rubbish heap. We dislike all plants for forcing that, if of last year's runners, make two or three crowns or buds, instead of one prominent hold one. All plants with pointed crowns and buds are generally best put aside. We have proved often and often that some of these fruitless plants when planted-out will regain their fertility; but in the great majority of cases we have found that they continue barren, producing little or nothing but huge masses of leaves, so that we strongly advise all those having small gardens and only a little space for Strawberries to select their runners from fertile plants only. We to a great extent secure this by planting-out forced plants, as, of course, we keep none but those that have fruited. In some few cases in early forcing the fruit bud after it shows may be starved, shrivelled, or damped, and such plants are just as good for planting-out as those that had fruited. Some kinds are more apt to be barren than others. Some years ago, for a late supply we used to grow the Elton, and were generally successful; but we recollect among good-bearing rows having a small row that would not bloom, and the plants yet looked all right, and we could not make them bloom, and the runners taken from that row were just like their parents, grew well, but never threw up a truss of bloom, though we tried them two seasons consecutively.

Apricot Trees on Walls.—We had purposed allowing these to take their chance this season, as we had no good covering to give them, and we knew that if the bloom was tolerably dry, it would take a considerable degree of frost to injure it; but when, eight days ago, we had snow, sleet, and driving rains, we thought if we should lose a crop, we would not easily forgive ourselves if we did nothing. By means of a few poles placed about a yard from the wall, we hung a net in front, and by means of a rod along the poles, fastened some long thin

branches of laurel outside the net, so thickly as to oppose a barrier to wet passing readily to the wall, and yet so thin to allow the rays of the sun to pass freely between the foliage of the laurel. As yet the fruit is setting, and all safe, though a few blossoms have dropped—often an advantage, as it saves some thinning afterwards. In many books and calendars there are directions about disbudding Apricots and Peaches as early as this, and, no doubt, they may be applicable to warm places in the south, but north of London we prefer little disbudding, or rather removing shoots, unless it be some strong foreright ones, until May, as the young shoots if rather numerous act as a good protection to the young fruit, and even then partly for the above reason, we go over the trees often, removing only a few at a time, so as not to check growth too much at once.

In looking over the trees in the orchard house we found half a dozen shoots plastered with our old enemy the brown fly, and they were quickly removed. If such an insect should appear where the shoot was wanted, we would wash with weak tobacco water, or, what we prefer, quassia water, as that leaves no unsightly appearance behind it. It is difficult to smoke these open houses, and we do not like to do it when the trees are in bloom; but as yet we have had no necessity, for no insects, except in these few cases, have appeared, and on this day, after a keen inspection, we failed to discover more. No syringing has been given them since they were syringed with hot water in winter. To the preventives then used we attribute the present healthy appearance and freedom from insects.

ORNAMENTAL DEPARTMENT.

Much potting, changing plants in conservatories, and hardening-off bedding plants by placing them in earth pits temporarily, much of the work alluded to last week being now done. Calceolarias were removed from the glass-covered pit, the soil was then removed, a little warm leaves placed in the bottom, rotten dung on the top, and then rough somewhat rich soil in which we shall plant Verbenas, whence they will rise in nice balls at bedding-out time, and do better than if planted out from pots.—R. F.

COVENT GARDEN MARKET.—APRIL 8.

A QUIET week and large supplies have caused reductions that sales may be effected, otherwise much perishable produce must be carted away as rubbish, a quantity having to stand over for another day.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....½ sieve	3	0	5	0	Melons..... each	0	0	10	0
Apricots..... doz.	0	0	0	0	Nectarines..... doz.	0	0	0	0
Cherries..... lb.	0	0	0	0	Oranges..... 100	3	0	7	0
Chestnuts..... bush.	10	0	15	0	Peaches..... doz.	0	0	0	0
Currants..... ½ sieve	0	0	0	0	Pears (dessert)..... doz.	4	0	8	0
Black..... doz.	0	0	0	0	Pine Apples..... lb.	8	0	12	0
Figs..... doz.	0	0	0	0	Plums..... ½ sieve	0	0	0	0
Filberts..... lb.	1	0	0	0	Quinces..... doz.	0	0	0	0
Cobs..... lb.	1	0	0	0	Raspberries..... lb.	0	0	0	0
Gooseberries..... quart	0	0	0	0	Strawberries..... per doz.	0	0	1	6
Grapes, Hothouse..... lb.	12	0	20	0	Walnuts..... bush.	10	0	15	0
Lemons..... 100	8	0	12	0	do..... per 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes..... doz.	3	0	4	0	Leeks..... bunch	0	5	0	0
Asparagus..... 100	8	0	15	0	Lettuce..... per score	1	0	1	6
Beans, Kidney..... 100	1	6	0	0	Mushrooms..... pottle	0	2	1	6
Beet, Red..... doz.	2	0	3	0	Mustard & Cress, packet	0	2	0	0
Broccoli..... bundle	0	6	1	6	Onions..... per bushel	3	0	5	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsley..... per sieve	3	0	4	0
Cabbage..... doz.	1	0	1	6	Parsnips..... doz.	0	2	1	0
Capsicums..... 100	0	0	0	0	Potatoes..... bushel	4	6	5	6
Carrots..... bunch	0	6	0	8	Kidney..... do.	4	0	6	0
Cauliflower..... doz.	2	0	3	0	Radishes doz. bunches	0	5	1	0
Celery..... bundle	1	6	2	0	Rhubarb..... bundle	0	4	1	0
Cucumbers..... each	0	5	1	6	Savoy..... doz.	1	0	2	0
Endive..... doz.	1	0	0	0	Sea-kale..... basket	0	9	1	6
Fennel..... bunch	0	3	0	0	Shallots..... lb.	0	5	0	0
Garlic..... lb.	0	8	0	0	Spinach..... bushel	0	2	0	0
Herbs..... bunch	0	3	0	0	Tomatoes..... per doz.	0	0	0	0
Horsradish..... bundle	2	6	4	0	Turnips..... bunch	0	4	0	0

TRADE CATALOGUE RECEIVED.

J. Ilman, Wellington Nursery, Strood, Kent.—*Catalogue of Ferns.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

BOOKS (*Timothy T.*)—The "Cottage Gardener's Dictionary." You can have it free by post from our office if you enclose *6s. 8d.* stamps with your address. (*A. F. Horncastle*).—If you enclose seven postage stamps

with your address, and order "Heating, by R. Fish," you will have it sent free by post. It contains very full information on the subject.

CALABAR BEAN (*Medicus*).—The most accessible account is in that excellent work of reference now completed, "Chambers's Encyclopædia," from which we extract the following:—"Calabar Bean, a very remarkable medicinal agent, which has just been introduced into the new edition of the 'British Pharmacopœia' (1867). It is the seed of *Physostigma venenosum*, a twining, half-shrubby plant, a native of Western Africa, and the natural order Leguminosæ, sub-order Papilionaceæ, nearly allied to the Kidney Bean, but of a genus distinguished by the hood-shaped stigma, and the deeply furrowed hilum of the seed. The following are the leading characters of the Bean itself: 'About the size of a very large horse bean, with a very firm, hard, brittle, shining integument, of a brownish red, pale chocolate, or ash grey colour. Irregularly kidney-shaped, with two flat sides, and a furrow running longitudinally along its convex margin, ending in an aperture near one end of the seed. Within the shell is a kernel, consisting of two cotyledons, weighing on an average about forty-six grains, hard, white, and pulverisable, of a taste like that of the ordinary edible leguminous seeds, without bitterness, acrimony, or aromatic flavour. It yields its virtues to alcohol, and imperfectly to water.' It is used in the form of an emulsion by the natives of Africa, as an ordeal when persons are suspected of witchcraft. About twelve years ago, Dr. Christison very nearly fell a victim to his zeal for science in experimenting on some specimens of this Bean which had been sent to Edinburgh by some African missionaries. In twenty minutes after taking twelve grains of the powdered seed, he was seized with giddiness and a general feeling of torpor; on which he took an emetic, and thus emptied his stomach. The giddiness, weakness, and faintness, however, increased to such a degree, that the physicians who were called in found him prostrate and pale, with the heart and pulse very feeble and irregular, and the faintness so great as to threaten immediate death, the mental faculties remaining perfectly clear. He complained of no pains or uneasy feelings, nor did the faintness of the heart's action give him any discomfort. Under the use of stimulants, warmth, pulsation, and the power of moving gradually returned, and the next day he was quite well. In 1854, fifty children were poisoned by eating these Beans, which were swept out of a ship at Liverpool. A boy aged six years, who ate six Beans, died very rapidly. It has been tried medicinally in small doses (one to four grains of the powder, or one-sixteenth to one-fourth of a grain of the extract) in chorea, tetanus, and other diseases of the nervous system; but its value as an internal medicine can hardly be said to be as yet established. Its principal use at present is to produce contraction of the pupil. This can be done by introducing into the eye either a minute quantity of the extract, or of paper, or gelatine rolled in a sheet, saturated with the extract, and divided into small squares, one of which is sufficient to produce the desired effect, which commences in about ten minutes, and lasts for about twenty hours. It is regarded as a very valuable addition to our ophthalmic remedies."

NURSERYMEN (*R. M.*).—We never recommend tradesmen. The plants could be supplied by any nurserymen who advertises in our columns.

PORTABLE BOILER FOR CONSERVATORY (*G. S. H.*).—Any of the portable boilers advertised in our columns would suit your purpose. A small saddle-back boiler, if fixed in the passage beneath the conservatory, would also suit the purpose. Two 4-inch pipes in front of the house would keep out frost. We do not much fancy two inch pipes, but three 3-inch pipes would do, and would heat sooner. However placed, the pipes will be an eyesore on the door so paved with ornamental tiles. We would have had all the heating medium beneath the floor. We presume you will have no difficulty in taking the smoke from the boiler or stove in the passage. The simplest plan of all to heat such a house would be to make a brick stove in the passage, with smoke funnel from it; build a chamber all round, with 5 inches of an opening, and from that chamber have an opening for the heated air to rise into the house. The walls of a dwelling house give great protection. In a glass case nearly double the width of yours, and not quite so lofty, Scarlet Pelargoniums stood for the last and the preceding winter without any artificial heat, except opening the door that led from the living-room for an hour in a very cold night. A gas stove in the house would give least trouble, as it could be taken away from the middle of March to the end of October; and a stove for the burner at one end, and the heated air passing through a pipe to the other, would be the simplest. For the whole system of heating by gas, see plans and explanations in a recent number. It is well to think of heating before laying the floor down. The stove would be the simplest, and an opening in the floor if near the middle of the house would be sufficient to keep out frost. One objection to such stoves is, that they will not draw with a long horizontal pipe unless that is taken to a lofty chimney. If you disliked a brick stove you could have a small iron stove, with funnel for smoke, &c., and surround it with a case of sheet iron, after leaving a vacant space all round. Some stones and gravel could be placed in the lower part of this space, and if that were kept moist the heated air that passed through the small grated opening, say 9 inches square, would be as humid as desirable. Better still, a vessel of water could be placed, not on the top of the stove, but 2 or 3 inches from it; and the dry air would be sufficiently moistened without being too much saturated before entering the house.

SHUTTING UP STOVES, &c. (*C. P.*).—The time for shutting up forcing and orchard houses depends on the weather and what is wanted. As to the orchard house, we shall have remarks next week. Generally houses are kept open too long. Sun heat is the best and cheapest heat. In such weather as we have had in the last days of March and the beginning of April, from three to four o'clock would be a good time. In a range of houses with a wall at each end, we generally shut up the west end first—say about three o'clock, the east end latest, and the intermediate divisions accordingly. Supposing your night temperature to be 65° or 70°, we should not object to the temperature of the house rising to 80° or 85° with sun heat after being shut up. In close-glazed houses we would shut off the bulk of the air early in the afternoon did we even leave a little air on all night, and this we would do where fuel is cheap. By leaving on full air until five or six o'clock you must use much more fire heat; or by shutting up then you will have as high a temperature in the evening and at night as you had in the afternoon; whilst the teaching of nature would say, Proportion your heat to the sunlight.

WHITE MARSEILLES FIGS FALLING (*J. S. Gordon*).—You should have told us how you grow your Figs. If in pots, they will cast some fruit every time the soil becomes dry. They will do the same if grown in a

narrow border. If you have given plenty of water, and not so much as to make a morass from undrained soil, and they still drop, ring the branches by shipping out one-eighth of an inch of bark some distance below the fruit.

RIBBON BORDER (*Westminster*).—We presume you mean seeds that you can sow at once; then the following would look well, beginning at the back or north side of the 4-feet border—viz., first row, Blue Branching Larkspur; second row, Prince's Feather, or Love-lies-bleeding; third row, Coreopsis Drummondii; fourth row, Silene pendula ruberrima.

PELAGONISMS (*Homunculus*).—Both of your two lists. If anything, Lucy Grieve would turn the scale. It is a lovely plant. Victoria Regina is also good.

VINES (*W. H. T.*).—Your proposed Vines in pots are well selected. We would plant out three Black Hamburghs, one Buckland Sweetwater, one Royal Muscadine or one Ewood Muscat. For the late vinery we would have three Hamburghs as proposed, two Lady Downe's, one Calabrian Raisin, and one Ewood Muscat.

GRAFTING HOLLIES (*Rever*).—Your Green Hollies about the thickness of a lead pencil would answer well for grafting, and no time should be lost in performing the operation. You may graft them close to the ground, and after claying draw the earth to the stocks so as to cover the clay. It would not do to take the stocks up and graft them before planting. They should be left where they have been for the past twelve months. Whip-grafting is the best. If newly planted, we fear the grafts would not take, but we have not tried it.

WIRE TRELLIS FOR STONE WALL (*A. O. H.*).—The sloping buttresses will not prevent your having horizontal wires. As the buttresses only reach about half-way up the wall, the upper part can very easily have horizontal wires fixed, and a straining plate of iron will only be required at each end for that part of the wall, and between each buttress you have only to put the same number of straining plates, close to each buttress, and you will thus treat the space between each as if the wall terminated there. The buttresses, of course, will not be wired. It will be less costly to wire the wall horizontally than vertically. For the latter you will require a plate of iron at the top and along the bottom of the wall, and the wires must be put up perpendicularly. The expense will be about double that of horizontal wires, and in our opinion the trellis will not be so good for training. You may have diamond-meshed trellises that would cover the wall to a nicety, and if with 4-inch meshes they answer very well. We have a trellis of this kind, and it looks well. It is thus made: quarter-inch wire all round serves to form a frame, and from this the wires, No. 12, run obliquely and form 4-inch lozenges. It is galvanised, and fixed to the wall with holdfasts.

LIFTING PYRAMID PEAR TREES (*Idem*).—So long as the trees remain fruitful, making no gross growths, and forming bloom buds plentifully, it is not necessary nor desirable to lift and root-prune them; but if they grow very vigorously, and make a quantity of wood that cannot be stopped or summer-pruned be induced to form flower buds, then lifting would be desirable, as it checks growth and tends to encourage the formation of fruit buds. In your soil we should think lifting would not be often required, if at all.

REPOTTING FERNS (*Perplexity*).—The best time to repot Ferns is March, or when they are recommending growth. November and December are the worst months in the year for repotting Ferns. Repotting at that time would no doubt help to cause their death; but we think their being kept in a cold vinery would be sufficient to cause the destruction of such kinds as Nephrolepis, which need a temperature of not less than 45° at night. If kept in a cool house they should not have much water—no more than enough to keep them fresh.

POURING WATER ON HOT-WATER PIPES IN FERNERY (*D. R. C.*).—It is a bad practice, and worse than useless for the destruction of the mealy bug. The black fungus will disappear when the mealy bug is destroyed. Instead of pouring water on the pipes we would advise you to sprinkle the floors, walls, and every available surface with water twice daily, morning and evening, keeping them always moist, but avoid wetting the fronds of the Ferns. As to the mealy bug, we would lay all the plants infested on their sides, and syringe them forcibly on the under side of the fronds with water at a temperature of 120°, turning them round. A few washings will probably clear the plants, and they may be kept clean afterwards by going over them frequently with a moist sponge, and wiping off every trace of the mealy bug. You may by pouring water on the hot-water pipes so damage the fronds of the Ferns that a twelve-month's growth will be required for their recovery.

LEAVES FORMING BUDS (*Idem*).—You will find a full explanation of the theory of propagation by leaves, for which we cannot afford space, in Johnson's "Science and Practice of Gardening," pages 268 to 277 inclusive. You can have the book post free from our office for 3s. 10d. in stamps.

BIRDS versus POLYANTHUSES (*F. P. G.*).—The only plan we know of that will keep them off is to put in small sticks, and about 9 inches out of the ground, and stretch black worsted from stick to stick, putting a double line of worsted along each line of plants. We find it best to put the lines of worsted about 6 inches from the plants on each side, crossing the worsted from stick to stick as well as stretching it straight along the rows. It is placed 8 or 9 inches from the ground. We find this effectual.

HYACINTHS AFTER FLOWERING (*A. H.*).—The plants should be kept in the pots in a light airy position in a cool house or frame until the foliage is well ripened. They ought not to be exposed to frost, and should be well supplied with water; when the foliage turns yellow gradually discontinue watering; withhold water altogether when the foliage is yellow. When it is completely so, turn the plants out of the pots, shake away all the soil, and place them on shelves in a cool airy shed to dry. When thoroughly dried remove the dead leaves, old roots, and all offsets, and pack the bulbs away in dry sand in a dry cool place, where they may remain until the following October, when they should be planted in good, rich, light, well-drained soil, with the crown 1½ to 2 inches below the surface, giving as a mulching over the ground about an inch thick of partially decayed leaf mould in December, before severe weather set in. The mulching may remain during the winter, and be neatly pointed-in in March. You will see by this that we do not advise the growing of Hyacinths in pots the second year; but we consider them very desirable and fine for out-door decoration.

SOWING PASSIFLORA EDULIS SEED (*Ada*).—The seed should now be sown in pots well drained and filled to within half an inch of the rim with a

should be potted in a compost of equal parts turfy sandy peat and fibrous sandy loam, good drainage being provided, for if the soil in the pot ever becomes waterlogged the plant seldom thrives. If the peat be deficient in sand, silver sand should be added liberally. The soil ought never to be allowed to become so dry as to affect the foliage. A temperature of from 50° to 55° is sufficient, giving plenty of air and water when growing, with a position near the glass. Keep the plant underpotted rather than overpotted, for it thrives best when the roots reach the sides of the pot.

VINE BLEEDING (*Rector, Kent*).—The best remedy that we know of for the bleeding of Vines is Thomson's styptic. Applied to the end portions of the wood it will stop the bleeding. If you prefer it, the ends may be seared with a red-hot iron until dry, and then be dipped in boiling tar and pitch; or rub into the pores of the wood (without the charring), a paste formed of one-third calcined oyster shells beaten to a fine powder in a mortar, and two-thirds cheese, working together until a paste is produced.

ARUMS—CAMELLIAS (*C. M. Major*).—There is no special work on the Belgian mode of growing either Arums or Camellias for specimen plants. The modes well known to all gardeners are sufficient. The pyramidal form of the Camellias exhibited at Ghent depended upon their training. The cause of the Camellia flowers not expanding no one can tell without knowing how the plants were treated. The roots may have been kept too cold, too dry, or too wet.

ANTS (*J. Beausire*).—No mode of banishing them is more effectual and obnoxious than sprinkling guano over their haunts.

HOTTEST PERIOD OF THE DAY (*J. T.*).—The sun's rays are most heating between one and two in the afternoon; but the highest temperature in the shade is not generally attained until between three and four.

NAMES OF FRUIT (*C. G.*).—Your Apples are—1, Beauty of Kent; 2, Duncow's Seedling; 3, Scarlet Nonpareil.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending April 7th.

Date.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 1	30.8.8	30.263	57	32	47	44	N.W.	.00	Overcast; densely overcast; clear and fine.
Thurs. 2	30.360	30.118	57	37	48	44	S.E.	.00	Hazy and overcast; cloudy; fine at night.
Fri. . . 3	30.227	30.101	65	28	48	45	S.E.	.00	Overcast; very fine; clear and fine.
Sat. . . 4	30.096	29.974	61	27	48	45	S.E.	.00	Overcast, hazy; slightly overcast; very fine.
Sun. . . 5	29.984	29.975	69	34	49	45	S.E.	.00	Clear and fine; very fine; fine at night.
Mon. . . 6	29.894	29.806	64	34	50	46	W.	.00	Cloudy; slightly overcast, fine; very fine.
Tues. . 7	29.775	29.482	66	37	50	46	S.	.04	Overcast; clear and fine; overcast, fine, rain.
Mean	30.082	29.959	63.14	32.71	48.57	45.14	..	0.04	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY EXHIBITIONS IN GENERAL.

CLASSIFICATION OF GAME FOWLS.

(Continued from page 264.)

PENS for single hens and pairs of hens without a cock have always appeared to me both absurd and useless, as a waste of room, and as using too many pens; and few purchasers buy hens for crossing with, or hens alone, but always purchase good cocks for crossing. I think a cock and three hens in each pen, as at first at Birmingham, are too many, and a cock and one hen to each pen too few, though this prevents the Game hens from fighting. A cock and two hens in each pen are, I think, the right number, the most correct and proper match for polygamous birds, better for sale, and for the size of both the pens and hampers in general use.

Full-grown cocks only should be shown as single cocks, as stags and cock chickens, not being spurred, can scarcely be termed cocks in the strictest sense of the word.

All the birds in each pen should, of course, perfectly match as to the relative size of the hens to the cock, as well as both hens being of the same size, and matching exactly in shape and feather, and in the colours of the eyes and legs, and if not matching should be at once disqualified from competing for cups, prizes, or commendations.

Fowls should never be too highly fed at exhibitions, but should have one good meal at least per day, but not so much as to distend their crops in the least, as this always looks bad. Water in small quantities should be often supplied and, of course, quite clean. The floors of the pens should be sanded or sprinkled with dry sawdust, the sand dry as well.

Pens are, perhaps, best fitted with perches to put up and take down. These should be taken down at daylight and put up in the evening, or when the exhibition is closed for the night, and then the birds will never lay in their own excrements. Fowls are seldom overfed at exhibitions, and over-feeding is very bad for them; so is starving them, of course.

The counties which have been most celebrated for the breeding of poultry are these:—Surrey, Sussex, and Berkshire, for Dorkings and the supply of London; Hertfordshire, which also has excellent fowls and supplies London; Devonshire and Somersetshire, which supply it largely; Yorkshire and Lancashire for Hamburghs and Game fowls; Buckinghamshire for Ducks; Lincolnshire for Geese; Norfolk and Cambridgeshire for Turkeys.

Hertfordshire chiefly supplies the north of London with poultry, and Surrey and Sussex the south and west of London in the same way, being the nearest of the best poultry counties to London.

The Birmingham Exhibition being in North Warwickshire,

which is the central district of England, will always, in all probability, be our chief poultry show. The Crystal Palace and the Bath and West of England Exhibitions used to rank next, but of late years the Manchester Exhibition certainly stands next to Birmingham, the Crystal Palace having given up. Manchester ought to be first-class for Game fowls in its situation.—NEWMARKET.

P.S.—In my last communication in page 264, in the seventh line from the top of the first column, read "November or the first week in November," and not December.

BUCKWHEAT FOR FOWLS.

You consider it not good as poultry food, but I always use it from Christmas till May; and the consequence is, I have eggs before any one else. I have this year sent nests to all my friends, even from hens, long ere they had any, and I attribute it to the buckwheat; whilst I can testify that when mixed they always pick it out first from all other grain.—NEMO.

ACCRINGTON POULTRY SHOW.

Few amateurs anticipated so excellent a Show at this season as that held on the 2nd inst. The competition was of a first-rate character throughout, and the entries amounted to five hundred pens. As an agricultural show was combined with it, the attendance was excellent, and the weather could not have proved more favourable. There is one point in the general arrangements open to great improvement, that of the public having unrestricted admission long prior to the commencement of the judging. From this cause alone, the poultry being all placed in one continuous tier, the two gentlemen who officiated as Judges were compelled to "elbow their way" backwards and forwards during the determination of the premiums, among a dense mass of general visitors, and still more personally interested exhibitors. This error was all the greater, inasmuch as the Judges were not permitted to commence until after eleven o'clock, at which time the Committee and Judges were marched to the Show ground headed by a local brass band. With a very little extra exertion in promptly penning the birds, and commencing early in the morning, every prize-card might easily have been affixed by the time just named, in lieu of that at which the awards began, besides which the finances of the Society would rather have been benefited than otherwise. With an energetic staff of "feeders," to place the birds quickly in position, the Judges at this time of year might easily have been at their duties by 7 A.M., and a trial of this suggestion will, no doubt, prove beneficial in future years. We allude to this oversight because the Committee of Management is evidently most anxious to improve the annual Show by the greatest personal exertions.

All of the *Hamm* classes were most excellent, and the competition lay among many of the best specimens of the day. Nor were the *Game* *Brahmas* less worthy of especial mention. It is but rarely that *Hamburghs* muster so numerously, or of so good quality, even at our largest shows, as they did on this occasion. Some especially good *Spanish* fowls were shown, but, as might be expected, not a few lacked the condition always essential to success. *Brahmas* and *Cochins* were good, and the *Polands*, though few, were capital. In the Variety class

were shown some of the best Cuckoo-coloured Cuchins ever yet exhibited. The "Selling class," to come under the hammer at 3 p.m., brought together a very large entry.

The *Turkeys* and *Geese* throughout were so good as to be a credit to any show; nor were the *Ducks* much less worthy of note, and the variety Duck class was one of the most popular of the meeting.

In *Pigeons*, numbers of most excellent specimens were present, but the pens were decidedly too low and too deep for these birds to be seen to advantage. As the time for closing the Show was so early as 4 p.m., this portion of the Exhibition was especially thronged.

GAME (Black and Brown Reds).—First, C. W. Brierley (Black Red). Second, E. Aykroyd, Bradford. Third, J. Fletcher.

GAME (Any other variety).—First, W. Boyes (Duckwing). Second, J. Fletcher (Piles). Third, J. Lanning, Spalding (Duckwing). Commended, W. A. Taylor, Manchester (Duckwing); C. W. Brierley (Duckwing).

DORKINGS (Any colour).—First, J. White, Waralaby, Northallerton. Second, Mrs. M. Seamons, Aylesbury. Third, J. Robinson, Garstang (Grey). Highly Commended, D. Gellatly, Meide; W. Parr, Patricroft, near Manchester. Commended, Mrs. E. A. Dale, Scarborough (White).

CUCHINS (Buff or Cinnamon).—First, T. Stretch, Ormskirk. Second, and Third, W. A. Taylor (Buff). Highly Commended, W. A. Taylor (Buff); C. Sidgwick, Keighley (Buff). Commended, R. Duckworth, Sheep Hey, near Ramsbottom.

CUCHINS (Any other variety).—First and Third, R. Smalley, Lancaster (White). Second, T. Stretch Partridge. Highly Commended, T. Wrigley, jun., Middleton (Partridge); T. Bott, Bury (Partridge).

SPANISH (Black).—First, H. Beldon, Goutstock, Bingley. Second, J. Newton, Silsden. Third, H. Wilkinson, Early, near Skipton. Highly Commended, J. Thresh; J. Newton, Silsden, near Leeds; Messrs. Burch and Boulter, Sheffield. Commended, Hon. Miss E. Douglass Pennant, Bangor; W. F. Pickard, Thorne, near Leeds.

BRAMAS (Any colour).—First and Second, E. Leech, Rochdale (Dark). Third, Hon. Miss E. Douglass Pennant (Dark). Commended, C. W. Brierley; T. Pomfret, Houghton Lane, Preston.

HAMBURGERS (Golden-pencilled).—First and Third, H. Beldon. Second, H. Pickles, jun. Highly Commended, J. Fielding, Newchurch; H. Beldon. Commended, T. Wrigley, jun.

HAMBURGERS (Silver-pencilled).—First, Second, and Third, H. Beldon. Highly Commended, T. Sharples, Crawshawbooth.

HAMBURGERS (Golden-spangled).—First, N. Marlor, Denton, near Manchester. Second, H. Pickles, Skipton. Third, W. D. Hyde, Harst, Ashton-under-Lyne. Highly Commended, E. Brierley, Heywood; H. Beldon; W. Parr. Commended, J. Lanning, Spalding.

HAMBURGERS (Silver-spangled).—First and Hamburg Cup, H. Beldon. Second, H. Pickles. Third and Highly Commended, J. Fielding. Commended, H. Beldon.

HAMBURGERS (Black).—First, J. Fielding. Second, Messrs. Walker and Mason, Denton, near Manchester. Third, W. Parr. Commended, C. Sidgwick.

HAMBURGERS (Any variety).—First, H. Beldon. Second, R. Bee, Goosnargh, Preston. Third, E. Brierley, Heywood (Gold-spangled). Highly Commended, T. Wrigley, jun. Commended, H. Pickles, jun. **HEA.**—First, H. Beldon. Second, J. Newton. Third, H. Pickles, jun. Highly Commended, J. Lancaster, Burnley. Gold-spangled; W. A. Taylor; J. Fielding. Commended, T. Wrigley, jun.

POLANDS (Any colour).—First, W. Harvey, Sheffield. Second, H. Beldon. Third, P. Unsworth, Lowton, Newton-de-Willows. Highly Commended, P. Unsworth; H. Beldon; W. Pickard. Commended, H. Beldon; W. Harvey.

ANY OTHER VARIETY.—First and Second, Col. Stuart Wortley, London (French). Third, R. Loft, Woodmansey, near Beverley (White Sultan). Highly Commended, J. Sichel, Timperley (Houdans); H. Beldon (Clove-Cour). Commended, D. Parsons, Preston (Cuckoo Dorkings); J. Sichel (Crève Cour); G. Huxter, Stillingfleet, Yorkshire (Malay).

SELLING CLASS (Any variety).—First, W. A. Taylor. Second, W. Bulcock, Burnley (Black Red). Third, G. C. Furness, Accrington. Highly Commended, J. & C. Furness; J. Rhodes, Accrington (Black East Indian Ducks); Messrs. Woodworth & Hargreaves, Oswaldtwistle (Polands); J. Robinson, Failandworth (Dorking); H. Beldon; J. Jackson, Bury. Commended, H. Wilkinson, Early, near Skipton (Black Spanish); C. W. Brierley; G. Anderton, Accrington; W. Boyes.

GAME BANTAMS (Any variety).—First, H. Shumach, Southwell, Notts. (Black Red). Second, J. S. Senior, Dewsbury. Third, C. W. Brierley.

BANTAMS (Any other variety).—First, W. A. Taylor. Second, T. Burgess, Brighouse. Third, Hon. Miss E. Douglass Pennant (Gold-laced). Highly Commended, J. Shackleton, Halifax (White-laced); W. H. Tomlinson, Newark-on-Trent (Black); R. E. Riley, Ovenden (Black); Messrs. Tonkin and Tuckey, Bristol (Black); T. C. Harrison, Hull; S. & R. Ashton, Mottram, Cheshire. Commended, — Bowden, Marchinton, Uttoxeter (Black); Mrs. Dale (White); N. Marlor.

TURKEYS.—First and Second, E. Leech. Third, T. Houlker, Revidge, Blackburn, Cambridge. Highly Commended, W. P. Pickup, Spring Hill, Accrington (Black Norfolk); T. Houlker.

GESE.—First, E. Leech. Second, J. Lancaster. Third, G. Huxter, Stillingfleet Vicarage, Yorkshire. Highly Commended, J. Huxter, Longridge; T. Briggs, Colcoats Hall. Commended, T. Houlker.

DUCKS (Aylesbury).—First and Second, Mrs. M. Seamons. Third, Bowman & Fearon, Whitehaven.

DUCKS (Konek).—First, T. Bott, Woodlands, Bury. Second, J. J. Scott, Rochdale. Third, J. G. Broxup, Burnley. Highly Commended, D. Parsons, Cuerden, Preston; J. West, Worsthorne; T. Bott; W. Parr; E. Leech.

DUCKS (Any other variety).—First and Second, C. W. Brierley. Third, W. Laycock, Woodville, Keighley (Carolina). Highly Commended, T. C. Harrison; H. Beldon (Callis); T. C. Harrison; S. & R. Aston (Carolina); Rev. W. Sergeantson, Acton Burnell (Carolina). Commended, Mrs. Clarke, Bedford (White Peruvian); S. Burn, Whitley (Black East Indian).

ANY VARIETY (Except Game and Game Bantam, within three miles of Accrington).—First, Mrs. G. Furness, Accrington (Cuckoo Cuchins). Second, B. Carlisle, Rishton (Brahmas). Third, G. Duckworth, Church (Silver-spangled). Commended, G. & C. Furness (White Bantams).

SINGLE COCKS.

GAME (Any colour).—First and Game Cup, W. Wheeler, Carlton, near Nottingham (Black Red). Second, J. Fletcher, Stoneclough, near Man-

chester. Third, J. H. Wilson, St. Bees, Cumberland (Black Red). Highly Commended, J. Fletcher; C. W. Brierley, Middleton; F. Sales, Crowle, Lincolnshire (Black Red); W. Boyes, Beverley. Commended, W. Boyes. **GAME (Within three miles of Accrington).**—First, W. Westall, Baxenden, near Accrington (Brown Red). Second, W. Morris, Accrington (Black Red). Third, W. Boothman, Accrington.

GAME BANTAM (Any colour).—First and Cup, J. J. Consins, Leeds. Second, J. Crossland, Wakefield (Black Red). Third, T. Whittaker, Melton Mowbray. Highly Commended, J. Lamber, Accrington; Bowman and Fearon. Commended, J. W. Morris, Rochdale; T. C. Harrison.

GAME BANTAM (Within three miles of Accrington).—First, C. Smalley, Oswaldtwistle (Black Red). Second, A. Riley, Accrington (Brown Red). Third, G. Birtwistle, Haslingden.

PIGEONS.

CARRIERS.—First, H. Yardley, Birmingham. Second, J. S. Skidmore, Nantwich.

TUMBLERS.—First and Second, J. Hawley, Bingley.

BARNS.—First, J. Firth, jun., Dewsbury. Second, A. Laycock. Highly Commended, J. Walker, Newark, Notts.

OWLS.—First, A. Dove, York. Second, H. Yardley. Highly Commended, E. D. Graham, Birkenhead.

POUTERS OR CROPPERS.—First, H. Beldon. Second, J. Hawley. Highly Commended, J. Hawley; H. Yardley.

FANTAILS.—First, H. Yardley. Second, H. Beldon. Highly Commended, J. S. Skidmore, Nantwich; T. Denton, Southwam.

TREBLES.—First, J. T. & J. Sykes, Rochdale. Second, J. Thompson, Bingley. Highly Commended, J. Thompson; H. Yardley; H. Beldon.

DRAGONS.—First, H. Yardley. Second, W. Harvey. Highly Commended, T. Houlker. Commended, T. Houlker; J. Robinson, Failandworth, Manchester.

TRUMPETERS.—First, J. Firth, jun., Dewsbury. Second, J. Hawley. Highly Commended, H. Beldon; J. Thompson; J. Hawley. Commended, J. Thompson.

ANY OTHER VARIETY.—First, H. Yardley. Second, J. Skidmore (Spots). Highly Commended, H. Yardley; J. Thompson; J. Hawley (Red Jacks); H. Beldon.

ANY OTHER VARIETY (Within three miles of Accrington).—First, Withheld. Second, T. Kenyon, Accrington (Black Turbites).

Mr. Hewitt, of Birmingham, and Mr. Tebbay, of Preston, were the Judges.

MR. JOHN MATHEWS EATON.

We learn from the *Field* that this enthusiastic, eccentric, Pigeon-fancier died at Chertsey as long since as the 19th of October last.

He was a tailor, but abandoned his business at Islington to devote himself to Pigeon-dealing. The Short-faced Almond was his favourite variety, and he considered a good specimen only surpassed in beauty by woman; and he had reason to consider it even superior to the individual he took to be his wife. From her he was separated, and found a more congenial companion and friend in Mr. Dean Wolstenholme.

His "Treatise on the Almond Tumbler," published in 1851, is little more than a reprint of Boyce's, which appeared in 1802; and his "Treatise on Pigeons," published in 1852, is a most irregular mixture of old Moore's "Columbarium" and notes furnished by our correspondent the late Mr. Brent.

DEFECTIVE-PLUMAGED POUTERS: THEIR USE, ABUSE, AND DISUSE.

ALTHOUGH colour has been the principal feature of this discussion, I propose, with the indulgence of your readers, to include a more direct consideration of the markings.

But before resuming may I inquire why so interesting a subject should not be discussed strictly on its merits, and quite apart from personalities and charges so totally gratuitous and unsustainable as haste, rudeness, &c.? It must be a poor case indeed that stoops to aid so unequivocal; nor can the merits of the question be in the slightest degree affected by the number of Pouters any of your correspondents may, or may not, have to spare.

My article of February 6th was written without a tinge of personality, was intended for general rather than particular application, and resulted from the patient (not hasty), study of the last two annual Glasgow shows. If I brought to such study some practical experience, I really must apologise for a fault of which it is now impossible to divest myself—a fault, indeed, which I share in common with my late censors. I am guilty, too, of withholding facts in support of my suggested remedy for bad colour, the which it appears I should have advanced "before condemning (b) the method of breeding followed by the oldest and most successful Pouter breeders." If Mr. Ure's courtesy is not equal to the admission of my experience, neither can it be equal to an admission of the facts comprised in that experience.

The "improvability of properties by selection," scarcely needed the intrusion of any facts of mine in its support, for it is endorsed by facts in the possession of every breeder, and

patent to every observant naturalist. Passing over, then, the seeming inconsistency that such facts should be required at all by "an old fancier" (especially in the face of the instance he has adduced in my favour), let it suffice to say that in common with the majority of fanciers, I have ever found colour a most controllable property, and that the German breeders, who make plumage their especial object of cultivation, are continually illustrating its subjection to careful selection.

So far from "condemning" the method of breeding, my article positively and clearly asserts its value, and only questions the departures from, or the one-sided application of, a principle ever the guide of painstaking fanciers. The results best test the method; to these, as illustrated in the late Glasgow shows, I have pointed, and from them shall continue to deduce further observations. These exhibitions are public, and I have yet to learn that my remarks have exceeded the bounds of truth or fair criticism.

We have seen that "selection" is the one principle relied upon by fanciers for the attainment of their results, that under its influence Pouters have made great progress in size and form. We have noticed that no such progress can be claimed for plumage; that while it is admitted that the markings may be improved with tolerable ease, and that in colour certain combinations are recommended and others condemned, yet the applicability of "selection" as a means of improving plumage has been questioned. We have further seen that no better, or, indeed, different principle for guidance has been advanced.

One more of these illustrations drawn from Carriers must be noticed. It is stated that "breeders match the best Blacks to Duns without injury to Blacks." This illustration is not nearly full enough to meet the requirements of the argument. It fails to state how often Blacks may be so crossed without injury; it omits to notice the poverty of colour from which Black Carriers are suffering; it takes no account of an essential difference between Carriers and Pouters, the former being whole-coloured, the latter pied; and it suggests a comparison between Dun and Mealy worth more than a passing remark. Although in Carriers, Dun may be considered as Mealy to the Black, yet in Pouters we have no Mealy colour at all the equivalent of Dun in intensity. Admitting that Dun Carriers may be frequently crossed with Blacks, does it follow as a necessary sequence, that the far-less-intense Mealy Pouter can be as frequently and as usefully employed, to say nothing of the markings—an element not without its weight in such a comparison?

It will scarcely be a digression here to state, that Carriers are displaying to a considerable extent the evils of one-sided selection, and that the partiality of breeders for "head" properties is resulting in some loss of that exquisite shape which should be a distinguishing characteristic of this remarkable variety.

Since my assertion of deteriorated colour is disputed by Mr. Ure, it may be desirable to offer some analysis of the coloured Pouter classes at the last Glasgow Exhibition. This at any rate will determine the present condition of plumage, even if it fails to endorse my views. On the occasion named, 138 birds were exhibited in the old classes as Pied Pouters of standard colour, against sixty-one Meales, Chequers, Splashes, &c. But before any approximate estimate of plumage can be formed these numbers require modification. From the 138 Pied Pouters, one-sixth at least must be deducted for birds too impoverished in colour fairly to rank in a standard class, and another sixth for birds of very indifferent markings, although of passable colour. By adding the forty-six birds thus deducted to the sixty-one figuring in the defective classes, a comparison of some importance is reached—good plumage being represented by ninety-two birds, whilst bad plumage claims at least 107. Nor are these deductions needlessly severe. It would probably be much nearer the mark to subtract one-fifth, or one-fourth even, in each case. No provision having been made for the exhibition of young Chequers, Grizzles, or Splashes, the young classes cannot figure in this illustration, but if they did similar deductions would be necessary.

As the best birds are brought out for exhibition and the worst left at home, it is more than probable that the foregoing statistics somewhat favourably display the proportion of good plumage to bad throughout the fancy, and whether they establish deterioration or not, they assert a condition of plumage open to immense improvement.

If "selection" implies that properties may be developed or intensified by attention, it also implies a non-application or misuse of that well-worn principle when any property exhibits

decline or failure. Is deterioration, then, too hard a name for the present condition of plumage, in the face of such statistics as the greatest Pouter show furnishes, to say nothing of the confessions lately appearing in these columns? Is it beyond the truth to attribute such deterioration or want of development to the known partiality for size and form, and the consequent one-sided exercise of selection?

But what of the future? for this is the question that most requires solution. Guided still by the light of selection, what may be expected from a stock weighted so heavily with defective colour and markings?

Making every allowance for the possible effective use of many doubtful specimens, granting that some may be most legitimately employed for strengthening the White strains, that others (under one ownership), may be matched to neutralise their individual defects, there still remains a proportion of defective plumage far too preponderating to be safely utilised by matches with the sounder birds. Any such attempt would but intensify the present disastrous tendencies, would accumulate in yet increasing numbers Meales, Chequers, Grizzles, and Splashes, would stimulate the production of still weaker colour, would raise further barriers against accurate markings, and would develop the strong bias to undesirable reversion, which is more than ever a characteristic of the Pouter classes in the departments now under consideration. I can, therefore, but re-affirm the suggestions contained in my article of February 6th. Future progress demands a far stricter selection for plumage, the exclusive use for the present of the soundest possible colour, and the temporary disuse of crosses at all likely to injure the markings, dilute the colour, or otherwise impair it in richness, smoothness, or lustre. Persistent efforts in these directions would ultimately establish plumage on a footing not less secure than size and contour. The multiplication of defective specimens would be restricted, the tendencies to unsightly reversions be in a great measure controlled, and birds purer in strain, richer in colour, and more comely in markings, would gradually supplant the well-nigh ridiculous nondescripts so frequently offered for our admiration.

Such selection should be well sustained. If ever our Pouters are to attain to a complete pedigree, they must breed far truer for plumage than they do now. Therefore, I claim for my recommendations more than a passing trial, and urge a perseverance more on a par with that enduring effort which has secured so much to admire in the domains of size, vigour, symmetry, and carriage.

However useful Meales, Sandies, or Chequers, may have proved for developing size and form, the occasion for their continued use on so lavish a scale has passed, or is passing. It is not now a question of raising grand birds from a stock "little better than Pouting Horsemen," as Mr. Ure puts it. The grand birds are already raised; it is simply a question, therefore, of maintaining our ground, while superadding undeveloped or neglected graces.

A sounder plumage thus established, new starting points would be secured for fresh triumphs with stocks far more true and effective. Then, again, might well-bred Meales be judiciously employed to dilute the too intense blue (as already pointed out by that tasteful fancier Mr. Huie), and other defective birds with especial reference to revision of shape, and to that lengthening of limb so much required to carry the increased length of feather.

To recapitulate. It has been shown that the present condition of plumage urgently requires attention; that unless such attention be promptly bestowed the difficulties of the situation will be materially complicated; that the principle of selection judiciously applied fully meets the case; that such selection involves the utmost circumspection in the use of defective birds, if not their temporary disuse; that no degeneracy in size or form need result from the more direct culture of colour and markings, for the circumstances under which a profuse use of defective-plumaged birds was justifiable no longer exist, or are advantageously modified; and, lastly, that artistic considerations demand numerical restriction rather than the perpetuation or multiplication of inferior specimens.

There is yet another aspect of this subject. In the defective classes there are many birds without pretensions to size, form, or excellence of any kind, but which are, nevertheless, used at the expense of every property in a mere eagerness to breed for quantity. This abuse might be effectively checked by a stricter classification of our public shows. On no account should it be possible to show Pouters very defective in colour or markings on equal terms with the standard specimens if shown at all;

but as an accommodation to breeders such birds might be provided for in a defective-plumage class, to be judged solely and rigorously for size, shape, carriage, limb, and constitution; and this system would have the additional advantage of displaying the taste and abilities of our judges in cardinal matters.—W. VOLCKMAN, *London*.

P.S.—Since the above was put in type an anonymous contributor has appeared in a discussion hitherto conducted under *bona-fide* signatures. Much that “DEEDS SHOW” advances or questions is anticipated in the foregoing article. It is somewhat difficult to disentangle the object of his remarks, seeing that he avoids any direct contravention of the principle of “selection,” a principle agreed in and illustrated by the very authorities he quotes, and practised in some form or other by every successful fancier.

A PERUSAL of Mr. Volckman's reply to Mr. Stuart and myself in the Journal of the 26th ult. quite confirms the impression made on my mind by his first article. He first introduced himself as having had a long practical experience in Pouter-breeding. I therefore asked him to give a few facts in support of his views, as such evidence would tell more strongly in his favour, if agreeing with his theory of breeding, than any amount of writing on the subject; but in his reply he does not even allude to this.

Again, in his report to the members of the London societies he says, “that deterioration is going on in almost every strain.” This assertion could only be made by one who is ignorant of what has been going on for the last ten or twelve years; on the contrary, I say most decidedly that great improvement has been going on in almost all the strains; and every fancier who may have seen the earlier Glasgow Shows will, I feel confident, agree with me, and I have not the slightest doubt but the same may be said of the Birmingham and other principal shows. Blacks had very often white faces or ring heads; Blues were much the same; Reds very poor in colour; and Yellows so scarce and inferior that there was no class for them the first year or two. I therefore claim for myself and for the principal Scotch breeders a great improvement even in colour and marking, though no doubt there is plenty to do yet, and we shall always be glad to receive practical hints or to receive more light; but Mr. Volckman has utterly failed to give us this, even to the extent of a farthing rushlight.

My illustration drawn from Almonds is, he says, unfortunate, as breeders are now at a standstill, if not actually going back. Not being at present in the Short-face fancy, I cannot say whether such is the case or not. I certainly think the birds at Glasgow during the late shows would not lead one to think they were sinking, and I know that some of the most successful breeders still adhere to this system; but the Short-face fanciers do not require me to assist them if they should feel aggrieved. This inability to move on, Mr. Volckman says, arises “from one-sided selection at the will or taste of the fanciers,” but he does not say how selection is to be made if not at the will and taste of the fancier. Perhaps the new Society which he has been aiding to form may, in its very comprehensive limits, appoint a committee of taste or a registrar general to decide upon the merits of the candidates for matrimonial felicity—to take care that the gentleman in black does not foolishly ally himself with the young lady in blue, and thereby entail disgrace on their descendants by having to pass through life as despised Chequers or seedy Blacks.

Mr. Volckman seems quite pleased with the fancy that it had taken Mr. Stuart and myself four or five weeks to reply to his first article, no doubt dashed off in as many minutes; but like Snug in the play, we are “slow of study” here in the north. It would, however, have been much better had he taken more time, and waited until he really had something to say worth hearing. Suppose that he had waited a few years to give his pet system of selection a trial to ascertain if it was really better than that which he condemns; if he had done this, and shown us better birds than we have been breeding, it would then have required no persuasion, by long wordy articles or otherwise, to follow his system, as Scotchmen have the name of being wide awake to their own interest. Who asked Mr. Volckman to believe that our present grand strains of Pouters have been bred from Pouting Horsemen?

I had almost forgot to ask, What of the Dun and Black Carriers? I may presume that as Mr. Volckman does not notice this that it is not unfortunate for me.

I think I have now shown that Mr. Volckman has in reality no practical experience in Pouter-breeding, and that he does

not know what has been done by fanciers in raising the various strains to their present comparatively high state of excellence; and in reply to his question of What ought to be done under the present condition and aspect of the Pouter classes? I would simply say, Nothing. The present system has raised those birds steadily; and though not yet all we could wish, I think there is sufficient vitality and power in our system to raise them still higher, or at least we shall let well alone till something better is brought forward.—GEO. URK, *Dundee*.

A GUIDE TO CANARY-BREEDING.—No. 1.

THE Canary lays from three to six eggs, and sometimes but not often seven, and has four or five nests in the season. Four is an average nest. Take out the egg every morning till the third is laid, and on the evening of that day remove the nest in which the hen has been scuffling about for the last week, and replace the eggs in a clean felt securely fastened, and carefully adjusted to the shape of the tin. This is best done by making the felt of a circular shape, and cutting a deep notch in the edge, which will make it fit without a wrinkle by pressing it into the tin. Should the bird have built her own nest, by all means allow it to remain intact, the above process applying only to the artificial nest system. Each has its merits. Try both, and adopt that which succeeds best with you. Some hens evince only a very slight inclination to build; while others are very clever architects, and, true to the instincts of their nature, construct such beautiful nests that, apart from all other considerations, one cannot help regarding them with admiration. I have twenty hens sitting, and have adopted both plans, and so far I decidedly advocate allowing the bird to construct its own habitation, but as the season advances I shall look with some apprehension for the appearance of the little red rascals, on the first sight of which I invariably change the nest instantaneously.

With reference to this matter, I will give an extract from a letter I received this morning from a lady, a valued correspondent. I give it both as an item of experience, and to show your fair readers what an interest our feathered favourites are capable of exciting in the minds of their own sex. My correspondent writes:—“As to nests, I always give my birds moss and hair to make their own in square boxes, which they generally do very nicely. When they do not I make the nest for them, putting moss in the corners and filling up with hair, rounding it with my knuckles and bent hand, and finally finishing with one of my hard-boiled hen's eggs while warm. It is easily done. As for red mites, I am rarely troubled with them. I saturate all the joints and crevices of my cages with sweet oil before I put up my birds, using a large camel-hair brush, and working it into the joints with a thin knife. I also pour oil into the nest boxes before they are used, allowing the oil to run into the joints. I repeat the process between every brood of birds, and carefully watch for the white powdery look which announces the presence of these pests, and brush the place over with oil. If they appear in a nest, a fresh one must be made as I have explained.”

On the fourth morning will in all probability be found another egg added to the number, and the hen will at once begin to sit, seldom leaving her nest except to feed, and that not often, as the cock, if he be a dutiful husband, will supply all her wants. The egg and hemp seed must now be discontinued. The breeder can satisfy himself in a few days as to whether there be any vitality in the eggs by holding them up to the light, when the blood vessels can be distinctly traced, and the egg will be observed to be semi-opaque, while in a day or two longer it will become perfectly so. Such are said to be “full” eggs. Others are worthless; and if at the expiration of a week they are still transparent, they may be at once removed, as it is useless to distress the hen by allowing her to sit them out, unless her services may be required as a nurse for the progeny of some other bird whose ideas of maternal duties are not of a very clear nature, and which is expected to chip on or about the same date as the other.

On the morning of the thirteenth day following that on which the bird began to sit, the young ones will chip—that is, supposing she lay her fourth egg on Wednesday morning, and at once begins to sit closely, they will chip on the following Tuesday week; and in anticipation of this interesting occasion, have in readiness a hard-boiled egg, and if procurable a nice bunch of chickweed, or, better still, lettuce. Pass a small portion of the yolk through the perforated zinc egg box, and add a little

crushed hemp seed, mixing the whole and chopping it very fine. After the first day or two the white may be added to the yolk. Place this mixture in one of the egg tins in the cage, suspending it in the front near one of the perches by weaving in a piece of wire crossways, on which it will hang by a couple of little hooks attached to it. If placed in the door the hand need never pass inside the cage at all, as the tin will always come outside by the opening of the door. Stand the green food in a small jar of water on the bottom of the cage. The old birds will at once commence feeding their infant brood, an operation which they will carry on at short intervals till they can perform that necessary act for themselves, which will be in about three weeks, more or less according to the attention which has been bestowed on them by their parents.

There is a great diversity of opinion as to the use of hemp seed as a food for the Canary. One of our most eminent breeders and most successful exhibitors, whose buffet is adorned with more than one silver cup won at our All-England exhibitions, is very much prejudiced against it. He denounces it in very strong terms. I shall not soon forget his raising himself from a reclining position in his easy chair in his drawing-room at his hotel in Sunderland, and while taking his cigar from his mouth not to intercept the utterance of so important a maxim, he gave me a smart slap on the knee as if to give still greater emphasis, and said, "Blakston, don't let your birds see hemp seed!" On the other hand, one of the breeders in this district brings up more young birds on it, and nothing else, than others who discountenance its use. Each breeder speaks most highly of that food which he has found most useful. One man condemns groundsel as green food, another uses nothing else, and the same remark applies to each and all of the various items which compose the bill of fare in the Canary room. This diversity of opinion must in the majority of cases result from pure ignorance, connecting certain results with certain causes, without thought as to the conditions which may have induced them. The lessons of our breeding season will teach an intelligent man more than he will learn from listening a whole lifetime to the nonsense preached by a certain school.—W. A. BLAKSTON.

AN EASY MODE OF PRACTISING ARTIFICIAL SWARMING WITH MOVEABLE COMB HIVES.

SOME of your readers may be interested in a method of swarming which I have devised, and successfully practised for the last few years.

My queens have their wings clipped, and the hives are set low, with a moveable board, one end of which rests upon the ground, while the other slants against the alighting board of the hive. When swarms may be expected, the hives for their reception are placed near the full stocks, with frames, &c., all ready for the use of the swarms. As soon as a swarm begins to issue, the apiarian watches for the queen, which will soon be found on the ground in front of the hive, vainly endeavouring to join her emigrating family. Gently seizing her by the wings or upper part of her body, he places her in a wire cage, paper cone, or any convenient receptacle. In a few minutes the bees, missing her, begin to return to the parent stock, which should now be removed from its stand, and the new hive put in its place. As soon as the bees begin to enter, their queen should be liberated at its mouth, and the bees compelled to go in as quickly as possible, when it should be placed where it is to remain during the season, and the old hive returned to its former position. If the hives in the apiary resemble each other, and are not placed too near to each other, there will be no necessity of removing the swarming stock from its place. When the bees begin to return, a sheet may be thrown over it to conceal it from them, and the new hive, with the cage containing the queen, may be placed upon or close to the old one, to be removed as soon as the bees are well hived. Should the swarm issue while no one is watching the apiary, the bees will return, and the queen will soon join them by crawling up the sloping board to the entrance of the hive.

Natural swarming may in this way be safely and easily practised in a large apiary without any fear of the swarms eloping, with little risk of different swarms uniting while on the wing, and without any necessity for ladders, saws, &c., or any of the perplexities with which some of your readers are doubtless only too familiar. The bee-keeper may thus, without any drawback, enjoy all the pleasing excitement of the swarming season. Any one able to distinguish the queen, and to put her in a cage,

may in the absence of the apiarian, easily manage the whole affair, removing the sheet from the old stock as soon as the bees have entered the new hive.—L. L. LANGSTROTH, *Orford, Butler Co., Ohio.*

FEEDING BEES.

I HAVE lost many stocks through insufficiency of food in the winter. Either I do not feed them with the proper mixture, or the bees do not get at it in the best manner. Is it advisable to put the food inside the hives? I have done so, because in the winter time it is not policy to disturb the bees or induce them to come out into the cold to obtain it.

Will wheat flour do as well as rye meal to provide pollen for the bees in the spring? I have tried the former, and find it will not answer.—C. B.

If you give your bees a sufficient quantity of food in October in the manner and of the kind described in pages 72 and 86 of "The Gardener's Almanack," they will do just as well on artificial food as on honey. They should, however, never be fed in winter. We have kept twenty-five stocks through the past winter on artificial food without losing one, and do not believe that they possessed on an average 1 lb. of honey to each stock.

Bees can always get sufficient pollen in this climate at all seasons whenever they are able to fly out. We therefore consider both wheat flour and rye meal worthless as substitutes for pollen in England, however valuable they may be in Germany.

OUR LETTER BOX.

DUCKS' EGGS FOR HATCHING (W. D. A.).—Your eggs will be useless; it is necessary for breeding purposes that the Ducks should be in water now and then. It is not required often.

BRABMA POOTRA CHICKENS' TWISTED WINGS (L. B.).—Your food is very good, add thereto some meat, cooked and chopped fine, and bread and milk, any other change will be beneficial. It is impossible to say how many of your chickens will be fit for exhibition; but if you have two out of six you will be favoured. The Dark Brahma chickens hatched the end of March will be fit to show at the end of July. Fowls that belong to large breeds, and are well managed, and have never had a check, should at six months old, weigh 6 lbs. Twisted wings are caused by contraction of the last joint of the wing, which draws the end feathers of the flight under the others, through which they pass and project.

SILVER-PENCILED HAMBURGHS (S. E. T. F.).—It is impossible you can be correct, you might as well expect them to remain small chickens always, and to cease growing, as to attain the age of twelve months without laying. They certainly lay, and their eggs are either eaten, or they eat them.

CHECKING THE GROWTH OF CHICKENS (L. S. D.).—We know no means of checking the growth of chickens without injury to the birds. Exposure to cold, deficiency of food, or want of quality in it, all check growth. Give your fowls some bricklayers' rubbish.

EGGS WITH THICKENED SKINS (A. I. P.).—Your eggs want moistening before the hatching time comes. They should be wetted every day for five or six days before hatching. The second skin is merely the lining membrane, which hardens from heat and drought, and which the chicken cannot pierce. If the eggs were wetted, this membrane would be soft and easily penetrated.

HOUZAN CHICKENS (J. C.).—Houzan chickens require no particular food or treatment. Feed them as you would others.

MIS-SHAPED EGGS (Osborne).—Your statement is a remarkable one. There is little doubt that purgative medicines would restore her laying properties; but you should save and preserve the very curious abortions you mention.

FOOD FOR DUCKS (J. W. E.).—We cannot guess at the food, that is required by six Rouen Ducks, having a grass run. The best way is to feed them yourself for two or three days. Worms given in very large quantities are bad food, and frequently kill Ducks.

INDIAN GAME FOWLS' PLUMAGE (Norrie).—The Indian Game are smaller than the English, and much more brilliant in colour. They differ in the spur, comb, and gill. On the hackles and saddles every feather has a tip of "light" at the extremity.

COCHIN-CHINA COCK'S HEAD SWOLLEN (C. L.).—Wash with a strong solution of alum; purge freely with castor oil, and feed entirely on bread and ale. We know of no better treatment.

SIX OF GUINEA FOWLS (A Constant Subscriber).—Only the hen utters the peculiar "cock-clark" cry. The male utters no other cry than a wailing whistle.

ANNIE AND DORA are informed that we will find next week, if possible, "A children's corner" in the Journal, for "the verses papa has made about one of their lively hens, to amuse them, and for their instruction too, he says, and which verses they think (and so we think) might amuse some other children as well, who, like themselves, are fond of poultry."

ARTIFICIAL SWARMING (Carotus).—Artificial swarming, when attempted by an unpractised hand, possessed only of common hives, is so uncertain in its results, that we hardly like to advise it, nor is it even certain that it will prevent natural swarming. If you decide on trying the experiment, the stock will probably not require a super at all, certainly not directly afterwards. Your bees may be very strong and very busy, but they are not likely to take to a super so early in the season. Bees obtain honey from all the bushes and trees you mention.

BEES FALLING (A. F. Newman).—Your bees which feed freely, but drop near the hive, seem to be suffering from either dysentery or dropsy. If from the former, this fine weather ought speedily to restore them; if from the latter, we know of but one mode of cure, and that applicable only to stocks in moveable comb hives. Write again if the disease does not abate, and state what kind of hives you use. Bees can now maintain themselves, and need not be fed.

WEEKLY CALENDAR.

Day of Month	Day of Week	APRIL 16—22, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year			
			Day.	Night.	Mean.		Davs.	m.	h.	m.	h.	m.				h.	m.	h.
16	Th	Meet. of Linnean and Chemical Societies.	57.3	36.7	47.0	26	3	af 5	57	af 6	33	af 2	23	0	20	107		
17	F		58.0	35.9	46.9	11	1	5	58	6	2	3	24	0	51	108		
18	S	Royal Horticultural Society's Second	56.6	35.6	46.1	16	59	4	0	7	30	3	7	25	0	43	109	
19	SCN	1 SUNDAY AFTER EASTER. (Spring Show.	58.9	35.0	46.9	8	57	4	2	7	54	3	15	3	26	1	1	110
20	M	Meeting of Royal Asiatic Society.	60.3	34.8	47.6	15	55	4	3	7	18	4	20	4	27	1	14	111
21	Tu	Royal Horticultural Society, Fruit, Floral,	59.5	37.0	48.3	14	53	4	5	7	42	4	20	5	23	1	26	112
22	W	Meet. of So. of Arts. [and General Meeting.	59.0	37.0	48.0	20	51	4	6	7	9	5	41	6	●	1	38	113

From observations taken near London during the last forty-one years, the average day temperature of the week is 58.5°; and its night temperature 36.9°. The greatest heat was 77°, on the 19th, 1854; and the lowest cold 20°, on the 19th, 1852. The greatest fall of rain was 0.56 inch.

TREES FOR SINGLE SPECIMEN IN EXPOSED PLACES.



ALTHOUGH general lists of shrubs and trees, as well as of other plants, are plentiful enough, yet selections available for special purposes are by no means so frequently given as they ought to be. True there is a long array of ornamental shrubs and trees, and hardy climbers are numerous enough, and not always easy to select from, but there is one class of trees and shrubs not over-numerous—namely, those well adapted to withstand

the storms incidental to a high and exposed situation, or to stand out singly as individual objects, and such of them as we have are not always of the description we want.

If shelter or appearance be the aim of the planter, it is better at once to choose something likely to insure the desired result, however common the plant may be, than to employ an exotic, but improper plant, that is thought to be rare and choice, with the certainty of seeing it drag on a wretched existence.

Could we but be led to think it, our own country possesses trees of extraordinary beauty and utility, our bluffs and headlands being, perhaps, as well clothed naturally as those of any other, and in these cases Nature selects the best and most suitable for each of her works. The Alder and Sallow occupy the marsh, the sides of brooks, and similar places, but are not often met with on the crests of hills 300 or 400 feet above the level of the adjoining country. On such elevations a class of plants especially adapted to high grounds is met with, and some of them are of especial beauty and merit. As it is often desirable to plant a solitary tree in such a position, the class best suited for that purpose deserves to have special consideration.

Assuming, therefore, that it is advisable to plant only a very small number of trees in such a situation, or it may be only single specimens at particular places, the list suitable for the purpose is a very limited one, and the trees constituting it will most conveniently be dealt with separately in the remarks which I purpose offering.

Yew.—This unquestionably stands first for the purposes referred to, not only from its great hardiness and its withstanding all the storms to which our island is subject, but also on account of its beauty and the associations connected with the tree. Yew trees frowning over chalk cliffs or precipitous rocks form a most important feature in the landscape of many districts, and the period for which the tree has done duty may often be computed by centuries. Its sturdy limbs seem to bid defiance to the violence of any gale, and, what is equally important, the growth on the windward side is scarcely less than that on the sheltered one. A slight inclination in one direction may be given to the stem or bole, if the tree has one: but even this is not always in the direction of the wind, and the Yew stands out boldly to the blast, presenting that unchanging appearance which possibly may have had much to do with securing it a place in our churchyards, where so many noble specimens of it exist. The Yew is also more accommodating than most trees, for, although it is often met with

in the most exposed positions, it is also not unfrequently seen luxuriating beneath the shade of other trees, where many plants would fail to live, and still exhibiting that sombre dark green appearance which is peculiarly its own. It is, however, mostly where it stands out in bold relief to the landscape that this fine tree appears in all its glory; its wide-spread limbs thickly clothed with a foliage which braves all weathers, and the strength and elasticity of its timber setting at defiance, or nearly so, all the vicissitudes of our climate. Even to time the Yew only yields after everything else has done so, it being about our longest-lived tree. Possibly when our collectors have exhausted both hemispheres of their arboreal treasures we shall then discover that we have some of the noblest of Nature's productions at home; for the Yew, the Scotch Fir, and the Beech, the Oak, and several other deciduous trees, together with the Holly as an evergreen, are not easily excelled.

The Yew will grow in most situations, but it delights in a dry stony soil, though it will make greater progress for a time in rich garden soil. It has also the good quality of transplanting well, if it has been transplanted before; but plants from seed self-sown in a shady wood, if 3 or 4 feet high, do badly when at once removed to an exposed place, and, indeed, are apt to die. Those, however, which have been inured to transplantation are but little affected by the operation. Staking, which is generally needed by newly-planted trees, is but rarely required by the Yew, and whether planted singly or in a group it may with perfect safety be placed to the windward of almost everything else with a fair prospect of its doing well. When planted in situations to which cattle have access, means must be taken to prevent their approaching it, as it is highly poisonous to them. Rabbits seem to be endowed with a greater perception of what is good for them than larger animals, for they do not meddle much with poisonous plants, but where they are numerous the Yew does not escape; at least, small plants suffer; but they are not so fond of this tree as of many others. In most cases, however, where this plant exists near a gateway leading to some pasture field it is advisable to make sure of that gate being always shut, or, by some slight protection to keep cattle and horses from partaking of it.

The Yew is of easy culture, and adapts itself well to most situations, except where the ground is either a stiff clay or very moist, but it grows best in the soils and situations where it is usually found wild.

Oak.—Like the Yew, this noble tree succeeds in the dense forest as well as when growing singly in an exposed position, but if the elevation is very considerable the tree in this case is more stunted in its growth than when otherwise situated. Planted singly in a favourable spot its powers of resisting the elements are very remarkable, and the country can boast of many fine old Oaks standing in such a position, and evidently capable of enduring for many years yet. I remember seeing in a hedgerow in Buckinghamshire an Oak that was very nearly 28 feet in circumference at about 3 feet from the ground, and that appeared likely to last for a century or more without

change. As a tree capable of withstanding the rude blast the Oak may with advantage be planted in most soils not of too peaty a nature, but even in such it will grow, although it succeeds better in a rather calcareous clay not too much charged with water. The limbs of the Oak rarely suffer from the wind, but the bole may do so a little, especially if the tree has been sheltered in the earlier part of its growth, and then exposed. Generally speaking, however, the Oak assumes that fine spread of head which renders it so prominent a feature in some landscapes that certain Oaks may be pointed to as landmarks. The Oak also looks well when in a state of decay; in fact, the painter would consider it in its glory when the tips of its branches were dead and dying.

The Oak transplants tolerably well; rabbits, where they are numerous, destroy small trees, and I have known mice in severe winters gnaw through the young plants at the collar, but the tree resists all attacks, even those of time, better than other rees.

CEDAR OF LEBANON.—The frost of January, 1867, having proved that many new trees expected to be hardy are not so, the rage for these has been somewhat checked, and the Cedar of Lebanon has maintained its place as being one of the most valuable ornamental trees we possess. I am not sure whether any of the Conifers imported during the present century (and their number is very great), approaches it in point of beauty and general adaptability; for we have no proof that the species introduced during that period will prove to be so hardy, and possessed of constitutions capable of withstanding the changes of our climate so well as this fine Cedar, which may now be said to be almost naturalised. The many large specimens gracing the lawns of some of our noblest mansions attest its enduring powers, as well as its capacity to become a large fine tree. Witness the fine trees on the lawn in front of Chiswick House, and many other places possess equally fine trees. In the garden of a farm house only a short distance from Maidstone, are two noble trees equalling in size many of the finest Oaks in the district, the bole of one of them appearing to contain from 70 to 100 cubic feet of timber, and the trees being likely to last some centuries yet. The cutting away of the lower branches some years ago, for the benefit of the under crops, has injured the appearance of the tree very much, as the Cedar usually branches close to the ground; and if the lower branches do die off, which is sometimes the case with very aged trees, the tier above them hangs down so as to touch the ground.

The Cedar likes a dry situation, or rather one in which stone abounds, and its capabilities of withstanding weather of all kinds are so well known as to require no comment. It is also well suited for planting singly, and looks better so planted than in a mixed forest. It may also be transplanted more successfully than some kinds of Conifers, and is rarely subject to any mishap. A very heavy fall of snow may break some of the limbs that are too heavily laden; but this is not of frequent occurrence. Winds rarely affect it, and when it occupies an elevated position its windward side presents much the same bold outline as its other side.

BIRCH.—The beauties of this tree are not half so well acknowledged as they ought to be. Its smooth silvery bark, now and then shedding an outer coating like the unfolding of a roll, with the numerous elastic twigs growing or rather hanging in graceful profusion all over an umbrageous head, and the whole clothed with pleasingly-shaped leaves, claim for the Birch a high position among ornamental trees. It is so different from the other trees which we possess, that no one can mistake the Birch for anything else than what it is, which is not always the case with other deciduous trees when viewed in winter from a short distance off. The Birch never attains the dimensions of some of our native trees, but it is unquestionably the hardiest we possess, as in one or other of its forms it is found ascending the highest mountains, as well in other countries as in this, diminishing in size according to altitude, and disappearing where only some insignificant member of the vegetable kingdom is able to exist. This proves the Birch to be a mountain tree, and its appearance in such a position is in an eminent degree ornamental. Either singly or in groups it forms a fine object, and like the Oak it sends its limbs out on the side exposed to the wind, just as much as on that which is sheltered; but the bole or stem often leans from the blast, yet its doing so adds, perhaps, to the beauty of the tree. The Birch thrives in a soil more or less inclining to peat, but does not object to moisture, is very accommodating, and succeeds in most situations, but is most at home on the steep side of a mountain dingle, and

there its feathery appearance when loaded with hoar frost is most elegant. On the level or highly-kept lawn it is also ornamental, and as a single tree it is highly deserving a place.—J. ROBSON.

(To be continued.)

CULTURE OF AURICULAS.

AN ardent and successful grower of this beautiful, and, in my opinion, too much neglected flower, I read with pleasure the article by "D." of Deal, in THE JOURNAL OF HORTICULTURE lately. A frame containing several hundreds of well-grown plants in full bloom is a sight worth going miles to see, and yet many a gardener and amateur who are enthusiastic about other plants, are in total ignorance of the perfection to which the stage Auricula has now been brought. What can be more exquisite, besides the perfume, than the contrast of colours in the grey, green, and white edges, and selfs? I confess to having had a passion for the Auricula ever since I was a boy, when I grew the border flowers of which I had many varieties, and I have never yet forgot the time, now nearly thirty years ago, when I first saw a few stage plants.

It is now six years since I invested in a dozen plants of the easiest-grown stage sorts, and for the first year or so felt rather afraid lest I should not be able to keep them. In place of that, however, they have thriven with me far beyond my expectation; and my stock, to which I have always been occasionally adding, at present consists of about four hundred plants, comprising eighty varieties of all the leading sorts. I experience no difficulty whatever in growing them, scarcely ever losing a plant, and the health and vigour of the whole stock are the admiration of every one who sees them.

The plants are grown in a frame very steep in the pitch, raised on stone pillars about 8 or 9 inches above the ground, with a step-by-step stage all open below, and placed about 10 inches from the glass. The sashes are linged at the top, and when open are kept up by a rod. There is a moveable glazed sash about 8 or 9 inches wide, hung on a pivot at each end, at top and bottom to admit air. The back and sides of the frame are of wood, and it is set about 6 feet from the back of a south wall, and facing the north. The pots are not plunged, but simply placed on the shelves, and the only extra protection the plants receive is with mats in severe frost in winter, or after they begin to grow in spring. The sashes are never taken off the plants all the season.

The greatest enemy to the Auricula is damp, and the plants can scarcely be kept too dry in the winter months. Worms, too, are very injurious, as they destroy the drainage. The simplest way, however, to get rid of them is to roast all the materials used in potting.

My treatment is as follows:—The blooming plants are grown in from 4 to 6-inch pots, according to size and habit. During open weather, about the first week in February, or as soon as the plants are observed to have started into growth, scrape off about from three-quarters to one inch of the surface of the soil, taking care at the same time not to disturb any of the roots, and top-dress them with a mixture of one-half well-rotted sheep dung, and the other half leaf mould, with sufficient silver sand added to make it porous, all having previously been put through a fine sieve. Give the plants a good watering, keep the pots clean, and stir the surface occasionally. They now require a considerable quantity of water, but it must be given cautiously, especially if the weather be frosty, and the air-giving must be regulated so as not to expose them to cutting winds. No water should now be allowed to touch the leaves, as it spoils the fine powdery appearance of the plants, and the best way to water them is with a low flat pan, having a long bent spout. If seed is wanted the flowers require to be impregnated when in full bloom, and this is easily done with a camel's-hair brush.

As soon as the blooming is over, the plants go to rest for a little. They should now have all the air possible, all the flower stalks should be removed if seed is not wanted, and in hot weather a gentle syringing should be given overhead two or three times a week. After a little the plants start again into growth, and the offsets begin to push vigorously.

The first week in August is the time I always repot, though I believe growers in the south do so immediately after the blooming is over. A mixture, which has been previously passed through a half-inch sieve, consisting of one half loam and the other half of equal parts of leaf mould, peat, and cow dung well rotted, and with a sufficient quantity of silver sand

added to keep it porous, is now prepared. The plant is taken out of the pot, and the old soil shaken clean away; any offsets are taken off with a sharp flat knife, and the cut parts rubbed over with a little powdered charcoal to stop the bleeding. All decayed parts are cut off, and any long roots shortened. A clean pot is taken, an oyster shell with the hollow inverted is placed over the hole in the bottom, a little moss is then put over it, and above the moss a handful of the rough riddings of the leaf mould. The soil is then put in, and around the roots, and the plant pressed in firmly with the hand, but so as to keep all the leaves clear of the soil. A good watering is then given, and if the weather is hot a slight damping with the syringe, and the frame is kept close for eight days till the plants begin to root. After that they should have all the air possible, and water when necessary till frost comes.

During the winter months the plants go to rest, and should have no more water than is sufficient to keep them from flagging. A yellow leaf should never be allowed to remain for a day on any plant, but must be immediately picked off.

There are some very fine varieties which are not yet sent out, but the cream of those generally grown in my opinion, say six of each, is as follows:—

Grey Edges.—Chapman's Maria, Chapman's Sophia, Headley's George Lightbody, Headley's Charles Edward Brown, Lightbody's Robert Trail, Cheetham's Lancashire Hero. *Green Edges*.—Eeston's Apollo, Dickson's Duke of Cambridge, Dickson's Duke of Wellington, Leigh's Colonel Taylor, Lightbody's Sir John Moore, Smith's Lycurgus. *White Edges*.—Hepworth's True Briton, Lee's Bright Venus, Trail's White Rival, Campbell's Robert Burns, Lightbody's Countess of Dunmore, Lowe's Maggie Lauder. *Sells*.—Lightbody's Lord Clyde, Lightbody's Meteor Flag, Smith's Formosa, Smith's Mrs. Smith, Martin's Eclipse, Martin's Mrs. Sturrock.

There are many others equally good, but a great step has of late years been made in some of the new plants, which will be let out by-and-by, and are exquisitely beautiful.—J. M.

BUSH FRUIT TREES.

I HAVE much pleasure in giving the information which Mr. Rivers is pleased to consider will "add much to the value of my communication," (see page 198).

I live two miles south of Lincoln, on a gentle slope at the foot of the Cross Cliff Hills. The soil in my orchard varies from 2 to 4 feet deep, and from a light sandy loam to a stiff clay, the greater portion being a moderately strong loam, just what one would desire for fruit trees. But this land has been artificially prepared in various portions, by clay and finely comminuted chalkstone (containing 98 per cent. of carbonate of lime), scrapings of limestone roads, &c., to suit the various fruits it is intended to produce. It has, moreover, been enriched, though all newly-trenched grass land, with good manure at the rate of 45 tons per acre, and 11 cwt. of half-inch bones. A long strip thus treated has been divided into nine parts and top-dressed with different chemicals.

The subsoil is gravel and clay well drained, although, being on a slope there is never any stagnant water, which, no matter how great the rainfall, percolates rapidly to the river. Taking advantage of the fall, I have made in the upper part a small pond, always full, whence the water is conducted in pipes into large oak casks sunk deep in the ground and covered over. Communicating with each is a 3-inch pipe through which the suction-hose is dropped down, and a Californian forcing-engine rapidly clears the aphides from the trees and waters them effectually as well. The supply from the pond is regulated by a screw sluice-gate. Thus, nearly all my trees can be easily syringed and watered.

Reverting to the subject of lifting trees, I must first thank Mr. Rivers for his explanation, and assure him that I never for a moment considered him capable of intentional "misrepresentation;" but that his bare statement, that "an active man can lift one hundred in a day," is calculated to mislead without explanation. Now, let us look at it and see how far we can agree. Mr. Rivers's man with a "treddle" spade and unlimited opportunity for back-stretching, can lift 120 per day; but Mr. Rivers is confident that a man with such a spade would do three times the work that the same man could do with an ordinary garden spade. Hence a man with a garden spade would lift forty per day. Now, my two men thus armed lifted one hundred per day between them, and, consequently, did half a day's work more than, according to Mr. Rivers, I had a

right to expect; but I am satisfied that, no matter what spade be used, two men can do such work proportionately quicker than one. Trees must be replaced at measured distances in straight lines, one holds the tree whilst the other cuts the roots, for at the first lifting of any tree this must be done, though it may not be necessary afterwards, and having a man on each side of the tree there is less moving about and less liability of damaging the neighbouring plants.

Mr. Rivers's explanation hinges altogether on the kind of spade, of which, I trust, he will kindly send me a specimen, as requested in a private note, for it will well pay its expenses. Mr. Rivers does not mention the kind of soil on which he experimented. It could hardly be more easy to work than mine, which required no scraping of the spade—an item that must much increase the time expended; and, moreover, he appears to have timed his man on one tree only, whereas I timed my two men by the hundred; first when they did not know, and the next day when they did, the result being the same. After all was over I read the passage from the "Miniature Fruit Garden," and they expressed a desire to see one of Mr. Rivers's men, and now they have heard his explanation they are as anxious to see his spade.

I am obliged to Mr. Rivers for an account of his plantations, and the gleam of comfort (?) he inspires by an account of the failure of his crops. Certainly it is a melancholy sort of satisfaction when one has no crop, to know that even Mr. Rivers himself has failed, and been beaten by our common enemy—frost; but I really do not require any comfort, feeling confident that bush fruit trees are "the best thing out," and must prove a success one year with another. But surely Mr. Rivers's plantation of Cox's Orange Pippins, which will stand eight years 3 feet apart every way, is more curious than desirable, taking quality, quantity, and early productiveness as the desiderata. I conceive that as long as a tree bears plenty of good fruit, and makes short-jointed wood full of fruit spurs, that the bigger one grows the tree the better. A well-managed hush 6 or 7 feet high produces something worth gathering, and I cannot help thinking, had Mr. Rivers allowed his trees to make more wood and thinned them out, that he would have realised more fruit in the same time off the same ground, and planted a similar piece as well; and I hope he will kindly tell us whether he advocates dwarfing to such an extent, as a means of obtaining the most good fruit on a given space, or whether it is merely a horticultural triumph, and an illustration of what can be done in the way of a miniature fruit garden.—G. C. E.

NEPETA TEUCRIIFOLIA, VIOLA CORNUTA, AND LOBELIA ERINUS SPECIOSA.

WHETHER *Nepeta teucrifolia* become a rival to *Viola cornuta* or not, as suggested in page 203, will remain to be proved, but it is well worthy of attention on its own account, and probably if we have a very dry summer, and beginning, as appears likely, early in the season, I fear many who have so strongly advocated the claims of *Viola cornuta* will be willing to turn round and admit themselves mistaken about its qualifications for withstanding dry weather. I do not wish to try to dishearten those who intend planting this useful bedder, but would advise their adopting a plan I noticed attended with the best possible results—namely, this *Viola* was planted alternately with *Lobelia erinus speciosa*; and as this mixture was all that could be desired last year, in which there was no lack of moisture during the early summer months, it is more likely to be of service in a season when, perhaps, we may be suffering from a contrary state of things; for in a dry warm season the *Lobelia* will prosper, but I have little hopes of the *Viola* doing so. In the well-kept garden at Preston Hall the mixture of the two was well carried out last year by Mr. Bradley, the gardener there, and very effective the lines of it were, and their beauty was long maintained.

The *Nepeta* will, I think, hardly come into competition with the above, being of taller growth, and in colour more of a lavender; it is, however, a plant of much merit, and its not being particular as to situation is a great point in its favour. It is also quite hardy, or nearly so, and is possibly capable of improvement. It would be a great boon to many, who are at a loss how to provide the numerous bedding plants which they require, to be able to press a goodly number of hardy ones into their service. I hope to see this done in time, and trust that many plants not yet thought of may be so much improved in the hybridiser's hands as to meet the requirements of the

day, of which a prolonged flowering is one of the greatest. That the *Nepeta* possesses this property is well known, but the number of its flowers may, perhaps, be increased, and their colour and quality improved. As it is, I certainly can, from a long acquaintance with it, recommend it for a line or edging near shrubs, or in some place where what may be called second-class plants are brought into use. For the geometric garden, where the highest colours only are admissible, I would hardly recommend it; but I have no hesitation in advising the mixture of *Viola cornuta* and the *Lobelia* for any situation in which the latter has hitherto been employed; and if the *Viola* were planted at once an earlier bloom would be secured than would be the case with the *Lobelia* alone, and most likely the flowering would also be longer maintained.—J. ROBSON.

MR. PERRY'S SEEDLING VERBENAS.

WHEN at the Birmingham Rose Show last year I took the opportunity of visiting Castle Bromwich to see Mr. Perry's seedling Verbenas, and as he had an unusually fine lot I send you a few notes of them. I assisted him in making a selection, and it was with considerable regret we threw aside a large number of really good flowers, so determined was Mr. Perry on sending out only the very best of his seedlings. Two span-roofed houses were devoted entirely to proving seedlings of 1866, and a few of the best sorts already out; and from these his supply of seed for the following year is obtained. His yearlings were all blooming in store pots in frames, and as soon as anything good is recognised it is marked for proving next year, and all not up to the mark are thrown away.

I regard Mr. Perry as the first Verbena-raiser of the day, for the greater portion of the best kinds now in cultivation have been raised by him; and the set to be sent out this spring would alone place him in the foremost rank of raisers if he had never sent out a Verbena before. They will probably consist of—

Miss Turner.—White, with very large pale rose centre, and very fine pip and truss.

Samuel Moreton.—Shaded rosy blush, with large dark centre. Very fine pip and truss, and very distinct.

Hercules.—Rich rosy carmine with dark centre; very fine form and large. A beautiful flower.

Emma Perry.—Blush white, with large dark rosy red centre; very fine pip and truss.

James Birkbeck.—Rich glowing light rosy scarlet, with light eye. A very superb variety both in pip and truss.

Mrs. Mole.—A peculiar lavender-tinted lilac, with large and finely formed pip and truss. Very fine indeed.

Interesting.—Pale scarlet, with distinct white eye and finely formed pip and truss.

Shirley Hibberd.—Intense dark violet, with small white eye, A rich-looking flower of great substance and fine form.

G. P. Tye.—Lighter than Mrs. Turner, with a deeper-coloured centre. A dwarf-growing kind, with very fine pip and truss.

John Wilson.—Rosy carmine, with a violet-tinted centre. Very fine truss and habit.

J. C. Ward.—Light purple, with light eye. Fine form and truss.

James Day.—Shaded light violet, with white eye. Fine truss.

Little Clara.—Shaded pink, with dark carmine centre. Fine form and fine truss.

I have yet to speak of the finest Verbena of all—*Mrs. Perry*, rich blue-purple, with large light eye, and very fine form. This is a superb kind, but it will probably be held over for another year. Several seedlings of last year have still to be proved, and there may be some fine kinds amongst them, but it will be difficult to beat those we selected.

I also give you the following list of the best of the older kinds I saw in Mr. Perry's houses. These are all exhibition flowers, and are grown for that purpose and for producing seeds.

Cleopatra.—Rich dark rose, with white eye. Extra fine.

Delicata.—Pale rosy pink, with light eye. Fine truss.

Harry Law.—Distinct rosy lilac, with large white eye. Very fine pip, and large truss.

William Dean.—Rich violet, with dark violet centre and large clear white eye, finely formed pip and truss. It certainly is a very fine variety.

Indispensable.—Shaded light purple, with well-formed truss.

Esquisite.—Bright reddish pink, with large lemon eye. Fine pip.

Snowball.—The best exhibiting white, but not a pure white.

Nemesis (George Smith).—Rich light scarlet, with small lemon eye. Fine truss.

Auricula.—Rich shaded purple, with large light eye.

Leah.—Pale shaded rose, with large dark centre and large white eye. Very fine pip and truss.

Firefly (Miller).—Lighter than Mazeppa. Very fine pip and truss.

Pink Perfection.—Bright reddish pink, with light eye. A most valuable kind for pot culture, beds, or cut blooms.

Majolica.—Shaded pale rose, with large white eye surrounded by a dark ring. Very large pip and truss.

Wonderful.—Shaded crimson, with white eye. Extra fine in pip and truss.

Meteor.—Rich glowing scarlet, with lemon eye. Small but well-formed truss.

Cato (George Smith).—Blush, shaded and marked with pink; dark eye. A good exhibition kind.

Rose Imperial (Boucharlat).—A glowing rosy pink, with large scarlet centre. Very fine truss.

Mrs. Turner.—Blush, shaded with pink, with a large, deep rosy pink centre. Fine.

Mauve Queen.—Shaded mauve and lilac, with a large light eye. Very distinct.

Charles Perry.—Rosy lilac, with a large dark centre and light eye. Very fine truss, and compact habit.

Champion.—Rich crimson, with small dark centre and yellow eye. Very fine.

Mazeppa.—Brilliant deep orange scarlet, with clear white eye; large pip and truss. Extra fine.

Harry Turner.—Shaded blush and lavender, with a bright centre, and very large well-shaped truss.

Magnificans (Boucharlat).—Lilac shaded with pink, large dark centre. Very large truss, and a fine back-row flower.

Apollo (Smith's).—Blush shaded with pink, and dark centre. Very large truss.

Lilac Queen.—Distinct from Mauve Queen, and very distinctly marked. Very fine truss.

Those to which no raiser's name is attached have been raised by Mr. Perry. There are also others of his raising, such as Charles Turner, Mrs. Dean, James Walton, and others, still very fine kinds. All that I have described I saw in bloom at his place, and others bloomed after I had a second opportunity of seeing his superb collection. He is a first-class grower, and aims at moderate-sized plants in small pots, and the plants are full of health and vigour; and what glorious trusses he obtains those who exhibit against him know full well.—WILLIAM DEAN, Bradford Nursery, Shipley.

TOBACCO LIQUOR FOR DESTROYING INSECTS.

I HAVE no doubt that many will agree with me that tobacco smoke is ineffectual for destroying black and white thrips, and also some species of aphids, especially the yellow aphids often found on Orchids. Three-quarters of a pint of tobacco liquor when obtained from a reliable vendor to one gallon of water for aphids, and one pint to a gallon of water for thrips, are good proportions. The mixture is to be syringed all over the plant or tree in the evening. We have tried the above proportions upon Vines, Peach trees, Orchids, and a variety of stove plants, as well as bedding plants of various sorts, and have found it quite effectual without causing the slightest injury to the foliage. If any insects escape the first syringing give another the following morning, and death is certain.

Tobacco liquor has other advantages. When only a few plants are infested with insects they can be syringed without the trouble and expense of fumigating a whole house.—W. CLARK, *Reby Gardens*.

PROPAGATION AND FAILURE OF CENTAUREA CANDIDISSIMA.

I WOULD advise cultivators of this *Centaurea* to examine their plants minutely this season, and I think they will find them attacked by grubs. Such was the case here last year, and they have again made their appearance upon old plants that have been in the ground all the winter. The plants in question had every appearance of those described by Mr. Robson (page 254). I have enclosed a grub for your inspection.

Those who wish to preserve old plants of *Centaurea candi-*

dissima, I would advise to select a few of the strongest plants any time in March or April, and to repot them in 12-inch pots. These plants can be used for decorating the flower garden by plunging the pots in the soil, and when taken up in the autumn are invaluable for decorating the conservatory in winter, and likewise useful to those who choose to propagate the plant in spring.

There are various opinions respecting the propagation of the *Centaurea*. Some are in favour of cool treatment, others are for spring propagation. We are all aiming at one point—that is, good strong plants for bedding-out early in the spring; and for this I can with confidence recommend autumn for the operation, and also a good bottom heat for the cuttings. Plants thus treated will be double the size of spring-struck cuttings. We find no difficulty in propagating and growing this *Centaurea*, and think it far superior to *Ciucraria maritima*.—W. CLARK, *Ruby Gardens*.

[The grub, though in a chip box, was smashed by the post-office punch; but we think from the skin that it is the "leather coat," or larva of the daddy longlegs (*Tipula*).—Eps.]

SETTING MUSCAT GRAPE.

HAVING lately observed in your pages a controversy respecting the setting of Muscat Grapes, and as your correspondent "Nexo" seems to think that the remarks made by Mr. Battram are inconsistent with both rule and practice, the following may perhaps help to convince him that setting Muscats in a damp atmosphere can be effected, and that Mr. Battram is not the only one who has met with success.

In one of the vineries at this place there are six rods of Muscat of Alexandria, four of Alicante, one of Ingram's Prolific Muscat, one of Lady Downe's, and one of White Nice. These Vines were wrapped in haybands, and laid along the front of the house until the middle of February, when we were under the necessity of undoing the bands on account of the forwardness of the Vines. At this time the temperature of the house was kept at about 60° at night, on account of a large Fig tree which covers the back wall.

The Vines were syringed twice a-day until they began to show bloom; the syringing was then discontinued, but abundance of moisture was kept in the house by the damping of the border and paths at least four times in the twenty-four hours. This house is very flat, consequently it is always late in the day before any air can be admitted: it is also the furthest house from the boilers of four, two of these being in forcing at the same time, and we could therefore admit no air after 2 P.M. Under these circumstances the above Vines have set as well as some of our Hamburgs which were setting at the same time in other houses. The greater part of the bunches are now thinned out. Ingram's Prolific Muscat is the earliest; Alicante and White Nice are very nearly together; but some of the bunches on the latter are taking the lead for size. Three of them measure respectively 16 inches long by 15 inches across the shoulders, 14 inches by 16, and 13 inches by 12. Muscats of Alexandria come next, and Lady Downe's is scarcely set.—J. TAYLOR, *Foreman, Nineham Park Gardens*.

OLD FAVOURITES.

I HAVE just received THE JOURNAL OF HORTICULTURE for April 2nd, and am reminded that I have lying in my desk a letter addressed to you a week ago, detained through my indisposition, which if not in the words of Mr. T. Williams, yet in the same spirit, expresses my hearty welcome to two letters, "Flowers of Other Days," and "Flowers Lovely Though Common."

To be thus anticipated is a real pleasure, showing that the number of those whose hearts are "affected" in the good cause is increasing. I am also grateful to you for so cordially opening the way for information on the subject, so that the neglected and forgotten may once more shine forth in their native beauty, as they did under the eyes of our grand parents, when in the "quaint parterre" they scented "the sweet Musk Rose."

In one respect I am disappointed. I had hoped to supply Mr. Harpur Crewe with the *Narcissus triandrus* or *cernuus* but Mr. Williams has anticipated me; to communicate is half my pleasure in cultivation, and perennial roots increasing so fast as they do, suggest liberality to our neighbour.

It was with great pleasure I observed that in your Journal

for March 26th, we are promised a further sight of the Orston Vicarage garden, so that we may compare notes with Mr. Mellish, for our borders have presented the same gay flowery appearance since the first week in February, and this will continue till the end of November, although Scarlet Pelargoniums and some other bedding-out plants will only find a place to fill up spaces, and give variety of colour. We are often asked by our neighbours whose borders lie fallow for six months, "How is it that you are never without flowers?" Our invalid friends, too, have been cheered by gifts cut from our early spring flowers, and London homes have been made fragrant with the breath of Primroses and Violets.

I have cultivated an old-fashioned garden for many years in the beautiful valley of the Dove, and in Cheshire; and when we came into Kent, though our garden plot is small, being so near London, where land is too valuable to afford large space for pleasure grounds, we still continued our old custom, and gathered together most of our "flowers of other days," but not without much inquiry, and some disappointment. However, we were fortunate in meeting with a nursery garden of long standing, where the intelligent master still kept up his stock of old-fashioned plants. There with many others I found *Dodecatheon meadia*, *Scilla bifolia*, *Fritillaria meleagris*, which grows wild in Dove meadows, Grape Hyacinths, blue and white, and the singular Fringe Hyacinth, which Mr. Stidolph, of Bromley, our good nursery gardener, says has become exceedingly scarce.

Should you not deem as an intrusion in your pages a few remarks as occasion offers on the cultivation of some of our handsomest wild flowers, I shall be glad to give you my experience, for we have never been without our "English border;" and having myself derived health of body and mind in the pursuit of English botany, and the cultivation of our best flora, I am desirous to interest the young and active of the present generation in the attainment of the same blessings by the same means, for

"Musing in a woodland nook,
Each flower is as an open book."

—ANNA HARRISON.

I AM well pleased to find that your readers are giving more attention to the hardy plants of our cottage gardens.

Your correspondent "H. Harpur Crewe" need not fear that his bulbs of *Triteleia uniflora* will remain dormant. They sometimes rest from being kept too dry. A friend has three pots of bulbs growing in a cold frame with his alpinas; some years since they remained dormant for two years, the third year they grew and flowered very well, and now, although they are growing in the same pots of soil, they are very healthy and promise abundance of flowers.

Ranunculus pyrenaica, the plant your correspondent Mr. Williams so much desires to have, was in my collection last spring; but it was lost by a black snail eating the root in two. As I have never seen it in flower I very much regretted the loss. "The pretty little plant from Lapland," *Cardamine trifoliata*, is eaten up by the same pest, which eats off the roots from the bulbs of one of my favourites, *Scilla praecox*, leaving untouched twelve or fourteen other kinds.

I have two beds of *Narcissus bicolor* just coming into flower. They promise to be, as they have been for some years past, a great ornament to my cottage garden. May your correspondents go on with their notes on our hardy favourites; if they do they will please your readers, and none more so than—RUSTIC ROBIN.

PREPARING LILIES OF THE VALLEY FOR FORCING.

As it may not be very generally known that by a very simple mode of procedure the forcing capabilities of this most deservedly popular plant may be materially enhanced, no excuse will be necessary in introducing a few remarks upon the subject in this Journal, more especially when it is considered that it is next to impossible to have a too large supply of them in flower, from the earliest months of the year onward until it may be possible to gather them from out-door beds. As a British plant, it should be essentially within the province of our craft to push the "Lily of the Valley" to its utmost cultural limits, without the aid or intervention of foreign ingenuity, or even more favourable climate. Yet true it is, nevertheless, that the Dutch, or others, are now making a profit by growing patches

of these suitable for forcing, and then sending them to this country by many tons weight annually, in company with bulbs which we are obliged to look to them for. There are two distinct features in the cultivation of this plant, operating antagonistically to the simple efforts hitherto expended in its culture—namely, a great dislike of being uprooted and separated into smaller portions, which do not very readily attach themselves to the fresh soil; and, when once they have taken possession of the same, such an extraordinary power of multiplication of all parts, that they very quickly become very densely packed together, each thereby neutralising the efforts of the others to attain a fine crown likely to flower in the ensuing spring, and, even should it flower, operating prejudicially as to its fineness. Hence the want of greater success in forcing plants grown after the ordinary method.

With the above suggestions as a basis to our subsequent operations, a piece of ground should be prepared by making a trench $1\frac{1}{2}$ foot in depth, adding abundance of manure, and working it to the necessary space which may be required, according to the quantity needed. When finished, the soil should be trodden firmly over its whole surface. Forming little bundles of from two to five individuals, and with all the roots possible attached and uninjured, dibble the bundles firmly in rows, some 20 inches apart. Fix them firmly in the soil, putting a thick layer of leaf mould over all when finished. With proper attention and keeping them free of weeds, &c., they will be fit for forcing in three years. Hence it will simply be necessary to plant a small space annually, to ensure after the above date a constant succession of excellent patches. A west aspect is the most suitable.—W. EARLEY (in *Journal of Royal Horticultural Society*).

OUR GARDENS.

Among the quiet enjoyments of a country life, there are few deeper or more lasting than that of gardening, to say nothing about its health-giving power and refining influence. But then it must be real gardening—that of digging and planting, sowing, and weeding, and watering. This enjoyment may be gained under various circumstances, for narrow limits do not in any important degree influence the return, some of the smallest gardens giving back the most.

It does not require any large amount of high culture or great physical strength (though both these in their way make work easier and more pleasant, and prevent loss and failure), for the ignorant often grope blindly away from the very end they desire. Not that all loss and failure can be called fruitless; sometimes they lead on to a higher success than might otherwise have been achieved.

It is an enjoyment lessened by no warring element, no class regulations. All may share in it who possess a few feet on the surface of mother earth, and are willing to bring the one thing needed—labour, and without it no garden can long be a pleasant place. So if you have a garden you must work if you have time and taste; if not, you must hire labour, for an ill-kept untidy garden is a constant reproach to ourselves, and an eyesore to our friends. Sometimes it is something more, as when our next neighbour suffered barrowloads of groundsel to seed among her Potatoes during the autumn months and our bit of a garden, standing north-west, received a seven-years benefit.

Yet there is no denying that gardens are a luxury; though we would fain make ourselves believe them a necessity belonging to the rich, those who are rich in means, or strength and time; for though gardens give long vacations during one part of the year, the other part requires incessant work. Nor is the vacation, though a long one, free from anxious forethought, to those who wish to go along with progressing times; and if there is ambition to be foremost, then labour and cost are never counted. Owners of pet villa residences will get up soon and sit up late to work or help on work, in their gardens. Mr. Jones, of Woodside, furnished himself with a good oil lamp for that purpose, and every morning through the dark days of winter, when there was no frost to contend with, might be seen digging or planting by its feeble light hours before his fashionable neighbours thought of their breakfasts. The mayoress of a large town, also used often to boast she did all the work in her not very small garden, even to mowing the grass plots, and clipping the edges; but the light mowing machine was always out of repair, and cost her husband far more than if a man with a scythe had done the work at the rate of half-a-guinea a-time. The large tailor's

scissors, likewise, which she worked with, wore out her gloves, and blistered her fingers; but she had her pleasure and did not mind—a pleasure she often said she would "not exchange for ribbon borders miles long." "What a splendid garden you have!" said a visitor. "Yes," replied the lady spoken to, "we have nearly two acres devoted to Flora's charms, and two men have nothing else to do but attend to her, yet I had more real enjoyment in the little garden I tended the first few years after our marriage. I am fond of outdoor work, yet I never dream of doing anything here." No one ever does where practical gardeners are kept, for of all men they are the sorest about any one intermeddling in their line of business: so it is best, I assure you, to leave them alone to their work; and do not trouble them with questions as to what this is, or what that is, for fear you are answered like the lady who asked her Scotch gardener what kind of seed he was sowing, and received the courteous reply: "Wait, wait, ma'am, and you will see;" or like one I heard of the other day, who, when desired to plant the herbs for kitchen use nearer to the house, and not at the very far extremity of a long garden, replied: "The'd soon be done, for cooks knew the cost of nothing."

But speaking of little gardens belonging to people not ashamed to be seen working in them, who has not often felt astonished at the number of plants and flowers such people can crowd into a small space, often working at short and irregular periods, and with poor tools? I once saw an old woman digging hard in her garden with a table knife, and when I suggested the absurdity of using wrong tools for wrong work, received the indignant reply, "It's all very well to find fault, but I dig with the best spade I've got—not a very poor one either, and my plants come up and flower just as well as if I worked with a bran new steel spade. Across the way there, they are waiting doing up their garden until they can buy a new trowel, the old one was left out all winter to rust, and they are missing the best growing time. It's a good thing to make decent work with bad tools."

Then, too, gardens have a great charm for us all; they are the bit of breathing space we like to call our own, and in which we may do just as we choose—it may be where our vagaries run riot, our peculiar fancies crop out to daylight: still it is our own. We may sow our seeds in tiny dots, just as much as a child's cup could cover, all up and down, without any thought of height of growth, or colour of flower; or we may scatter them broadcast, as the German traveller did his choice Ten-week Stocks, and like him may wonder and wait, and wait and wonder they come not up to daylight. Or we may sow the whole slope of a long terrace with Mignonette, as the poor curate fresh from town did, thinking there could not be too much of what was sweet. Or we may turn all our flower borders into short, soft grass for our little ones to play upon, or for larger children to roll balls about. Still, our garden gives us back full measure of enjoyment. There are times when it does more than this, when its work is at rest. How many weary overtasked heads find balm and strength doing their gardens beneath the budding trees! And many a poor lady, tired of the sound of her solitary needle, seeks change and pleasure in pricking-out her Asters and Phlox Drummondii—doing it, spite of all professors in the art have said to the contrary, in gloved fingers, otherwise she could not do it, for the fresh soil has a strange power of roughening what is smooth, and would thereby render other work impossible.

No country English house seems what it should be without a garden—a place for work, and rest, and enjoyment; and its extent has very little to do with the measure of that enjoyment. Though much may be said in favour of the capabilities of a large one, a small one is not without its advantages. It is more under the command of its owner; is nearer to the home; often furnishes more variety, for it is less under the influence of fashion; its owner dares to cultivate long-discarded plants and flowers, and to venture, without any fear of failure, into new untried ways—ways strange and hazardous, which a veteran gardener who had solved all the mysteries and climbed all the heights of knowledge would never think of going, seeing the probable end. Yet even the risk is a pleasure, and the blame can fall but on one, the master workman.

Then, too, small gardens are more lived-in than large ones. They are resorted to at all hours of the day, from early morning until sunset. Every little plant and flower and coming bud is watched, and noted, and wondered about, and loved. The garden is as it were a summer home. And if it has a thick hedge to afford shelter from the wind, so that the leaves of

our book turn not over before their time, and the repose of our work-basket be not disturbed, a tree to shade all from the sun's heat—then to many possessors of small gardens is happiness complete.—*MAUD.*

HEDGE PLANTS.

(Concluded from page 237.)

BLACKTHORN.—Formidable as this plant is as a solitary bush, or when it forms a portion of a hedge composed of miscellaneous shrubs or bushes, it is seldom we see it employed by itself to form a hedge. It does not bear cutting so well as the Whitethorn, neither does it grow so fast, at the same time it is, perhaps, less liable to injury than any class of hedge plant we possess. It suffers less than the Whitethorn from the attacks of rabbits; and to those who admire early-flowering shrubs, it is amongst the first of our native ones that blossom, and its flowers are also of much beauty. The Blackthorn thrives best on a rather stiff soil, but it is not very particular as to situation; its growth, however, is not fast, and it seems to produce suckers in greater abundance than neatly-trimmed hedge plants should do. Where there is a difficulty in rearing the Whitethorn, this plant may be substituted for it with advantage.

WHITETHORN.—This is unquestionably the most popular and useful hedge plant we possess, and the general aspect of our country would be poor indeed were this plant no longer cultivated. It is not, perhaps, any exaggeration to say that no individual tree or shrub is propagated and planted to an equal extent with this, and well it repays the attention given it. So generally is it used as a hedge plant, that when the term hedge is used we conclude that one of the Quickset is meant, other hedges receiving a special designation. It has its favourite positions, and one of the best is a dry stony soil, porous and accessible to its roots for at least 2 or 3 feet; in such a position its progress is rapid, and it is also more tenacious of life than when in a soil of an opposite character. A dry hungry gravel is not the place for it, a sound loam being better; but very good hedges are often met with in those dry warm soils which produce good Barley and Potatoes. The Whitethorn hedges in some parts of Bedfordshire are good, and so are those in most districts favourable to agriculture.

The modes of managing Quickset hedges differ widely in different districts; in many parts of England it is common to plant the hedge on the side or top of a bank, with a ditch in front, and in some bleak neighbourhoods it is allowed to grow and branch out as much as it likes, with a regular cutting-down once in ten or twelve years, the materials thus obtained being used to make what are called dead fences, or to repair others. The bushy irregular growth a hedge of this class presents is certainly more pleasing to the eye than the closely-shaven line met with in other places, but it occupies more space; its utility, however, is in the shelter it gives to stock, and the little trouble it involves. The number of hedges of this class, however, decreases every year, and close trimming seems to be the order of the day. The most common plan, where the situation is favourable, is to plant on the level ground, and dig a ditch on the most exposed side; trimming for the first two years, however, ought to be limited to the winter, after that it may be done in the summer, or when the plant has become well established. The most common shape is not by any means that most to be admired, or rather the shape or section is altered by degrees until it becomes objectionable. Assuming the top to be pointed ridge-fashion, the greatest width very often is about 1½ foot from the top or thereabouts, and there is very little growth at the bottom. To remedy this, or rather to devise another mode of making the Quickset hedge more formidable to cattle, the farmers in Cheshire cut their hedges so that the section would resemble an equilateral triangle, the bottom being about 4 feet wide, and tapering from thence to the top. Some may say that the merits of this plan are more than counterbalanced by the greater extent of ground the hedges occupy, and this would certainly be urged against them in places; it may, nevertheless, be the one most likely to secure a good long-lived hedge, and when such a hedge is really good it is difficult of approach by cattle or anything else, as the width at bottom renders it difficult to climb over. Nevertheless, I certainly prefer the mode in which Quickset hedges are treated in this part of Kent, for they have the advantage of occupying very little ground, and when well managed are pretty and useful.

The plan differs in no respect from that adopted elsewhere,

excepting in the narrow trimming the hedge receives when full grown; but on being planted the young plants are not cut down the first year, but are allowed to become established one year, when they are cut down. If the ground is well attended to and other things are favourable, a strong vigorous shoot may be expected, and no trimming ought to take place until the end of the season's growth, when the side shoots are cut in rather closely, and a little of the tips taken off. This is repeated the second year, but after that the hedge will bear and require cutting a little in the middle of summer, but this is certainly not advisable until the plant has attained some size and strength, for cutting in any deciduous plant during the period of its growth certainly checks that growth. In the early period of a hedge's growth this is not advisable; afterwards it may be done with advantage. The trimming or clipping, I may observe, is done with the view of keeping the hedge as narrow as possible, consistent with strength and the requirements of a hedge, and I believe there are fences in my neighbourhood that are, when closely trimmed, not a foot thick in any part, and yet have been kept so for twenty years or more, and so close all the way up, that it has been the boast of the farmers that some of their fields would keep in a hare everywhere but at the gate. After several years' cutting, the hard closely-trimmed hedge has a woody appearance, and is exceedingly strong if it is growing on a soil favourable to the Whitethorn. The dry stony soils of some districts are more favourable to it than those of a contrary description, and on some waste lands of this kind that were enclosed forty or fifty years ago by Quicksets planted in straight lines generally intersecting at right angles, we may find some of the best specimens of Quickset fence in the kingdom. In the district alluded to it is common to plant the Quickset on the level ground, and if it be a meadow, a space of about a foot or so on each side of the collar of the plant is kept clear and free from weeds. If the ground is arable, cultivation is carried on to the roots of the plants without any loss or waste, as is sometimes the case where there is a ditch or bank. Cleaning out the weeds from the base of a hedge in a meadow, as is sometimes done, certainly gives it a neat appearance.

BEECH.—This is generally planted rather for shelter than as a fence, and frequent trimming tends to cause it to keep its old leaves on all the winter. The Beech also grows to a larger size than most other hedge plants, and does not look badly in the summer. The Hornbeam is sometimes substituted for the Beech, both being alike in their growth and property of retaining their old leaves during the winter. As objects for shelter they are certainly desirable, but beyond that their merits as hedge plants would appear to be inferior to those of many others.

Miscellaneous plants or trees occasionally used are so various that it is scarcely possible to enumerate them. Generally speaking, in old hedges by the side of woods we find everything that grows near them, and possibly considerable portions of many such fences were naturally produced, and filled up a little afterwards by the cultivator. In such we often meet with Briars, Brambles, scrubby patches of Oak, Hazel, Maple, Poplar, and other kinds of deciduous trees; but these are mere makeshifts, and not to be recommended, except in special cases. In one case I saw an Elm hedge, upwards of 30 feet in height, partly entangled with Ivy, and trimmed tolerably accurately; being for shelter it served its purpose well—certainly much better than a row of Spruce Firs would have done, as this tree is rarely met with in a healthy condition on its exposed side, whereas a deciduous tree generally stands better against the elements. Ornamental hedges of other kinds may also be met with, some being composed of such shrubs or trees as the fancy of the grower may suggest, and more kinds of fruit trees than one are used in this way. I may add, as regards the choice of a hedge plant, that certain soils and situations favour the growth of certain plants, and the requirements of the case have also to be consulted; but amongst the plants I have named, one or other will be found to meet the wants of most places.—*J. ROBINSON.*

ORNAMENTAL AND FLOWERING SHRUBS.

(Continued from page 240.)

PALURUS ACULEATUS.—Flowers yellow, small, June to August. Leaves small and shining; shoots very spiny. The flowers are succeeded by a curious fruit, said to resemble a straw hat. 8 to 12 feet. Cuttings of the roots, or seeds in heat.

PHILADELPHUS CORONARI.—(Mock Orange).—Flowers white, with a

sweet, powerful odour. The double variety is very handsome, and the variegated form desirable. 8 to 10 feet. Layers and cuttings.

PHILADELPHUS LAXUS GRANDIFLORUS.—Flowers white, large, produced in profusion in June. A remarkably fine shrub. 8 to 10 feet. Layers and cuttings.

PHILADELPHUS GORDONIANUS.—Flowers white, numerous, large and very fine, in July. 8 feet. Cuttings and layers.

POTENTILLA FRUTICOSA.—Flowers yellow, in July and August. Cuttings and seeds. 3 feet.

PYRUS ARBUTIFOLIA.—Flowers white, in May, succeeded by dark red fruit. 4 to 6 feet. Suckers.

RIBES AUREUM.—Flowers yellow, sweet, in April and May; very desirable. The varieties *Gordonianum* and *flavum* are good. 6 feet. Cuttings and layers.

RIBES SPECIOSUM.—Flowers deep red, pendulous, in May; very fine. 6 feet. Cuttings and layers.

RIBES SANGUINEUM.—Flowers red or rose, drooping, very profusely produced, and very handsome, in March and April. The variety albam with white flowers is very fine, and glutinosum and atro-rubrum are very desirable. The Ribes are among the handsomest of spring-flowering shrubs, and should be extensively planted. They make fine standards, and are very effective in flower gardens when on clean straight stems. 6 to 8 feet in good soil. Cuttings and layers.

RHUS COTINUS.—Flowers green, in panicles, very elegant, in June and July. 6 to 8 feet. Layers.

RHUS GLABRA.—Flowers elegant, in panicles, succeeded by red fruit; very desirable. 12 feet. Layers.

RHUS LACINATUS.—Flowers rose, leaves deeply cut, and very fine. 5 feet. Layers.

RUBUS FRUTICOSUS (Bramble).—The double rose and double white varieties are very fine, and grow almost everywhere. Layers.

ROBINIA HISPIDA.—Flowers rose, large and produced in profusion; leaves Acacia-like, rendering it one of the most ornamental of shrubs. It flowers from May to September. Grafted on the Thorn Acacia standard high it is very effective, but does not succeed except in mild sheltered situations. 8 feet. Seeds.

SPIRÆAS arifolia, *Lindleyana*, *hypericifolia*, *opulifolia*, *prunifolia plena*, *grandiflora*, *salicifolia*, and *ulmifolia*, all with white flowers; and *S. callosa*, *Douglasii*, and *bella* with rose flowers, are amongst the handsomest of flowering shrubs, and, deserving of every care, ought to be extensively planted. 6 feet. Cuttings, layers, and suckers. They succeed tolerably well in the shade of trees.

STAPHYLEA TRIFOLIATA.—Flowers white, pendulous, and handsome, in May and June. 8 feet. Cuttings and suckers.

SYMPHORICARPUS RACEMOSUS (Snowberry).—Flowers rose-coloured, small, in summer, succeeded by large white berries. Has no equal for growing in the shade of large trees; in fact, it will grow almost everywhere, and on that account is very desirable. 6 feet. Suckers.

SYRINGA VULGARIS (Lilac).—Well known, and very suitable for general shrubberies. There are several varieties, all ornamental and producing a profusion of fragrant flowers varying in colour, being lilac, white, purple, reddish, and bluish. They flower in May. 10 feet. Suckers and layers.

SYRINGA PERSICA.—Flowers pale purple, sweet, in dense clusters, very fine, in May. The white variety and that with cut leaves are fine. 6 to 8 feet in good soil. Suckers and layers.

SYRINGA ROTHOMAGENSIS SAUGANA, probably a variety of *S. persica*, having deeper-coloured flowers and more compact bunches of flowers. It is also a stronger grower. 8 to 10 feet. Suckers and layers.

SYRINGA JOSSILEA.—Flowers dark lilac, very fine. 6 to 8 feet.

SYRINGA EMODI.—Flowers white, numerous, and good. 8 feet.

VIBURNUM OPULIS (Gueldres Rose).—Flowers white, in large corymbs, in May and June. Succeeds well in damp ground under trees, and is very ornamental everywhere. There is a dwarf variety, fine for shrubberies. 8 to 12 feet. Cuttings, seeds, and layers.

VIBURNUM LANTANA.—Flowers white, in June, succeeded by red berries changing to black. The leaves assume a rich red tint in autumn. 12 feet. Seeds and layers.

VIBURNUM LENTAGO.—Flowers white, in July, succeeded by black berries. It is a desirable sort. 8 to 10 feet. Seeds and layers.

WEIGELA ROSEA.—Flowers rose and white, sweet-scented, produced in clusters in April or May. It is one of the very best shrubs of low growth, thriving in any open situation, and in almost all soils. As a plant for forcing it is excellent. *Stelzneri*, *nana* variegata, and *Treloii* are pretty and superior varieties. 4 to 5 feet. Cuttings.

WEIGELA AMABILIS.—Flowers deep rose, in early summer, very fine. There is a pretty white variety, as well as several others.—G. ABBEY.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

ARISTOLOCHIA RINGENS (Gaping-flowered Aristolochia). *Nat. ord.*, Aristolochia. *Lim.*, Gynandria Hexandria. Twiner.—Native of Santa Cruz, in New Grenada. Roots, called "Guaco" by the natives, esteemed an antidote for snake bites. Flowers green, marbled with purple; open in September.—(*Bot. Mag.*, t. 5700.)

IPSEA SPECIOSA (Beautiful Ipsen). *Nat. ord.*, Orchidaceæ.

Lim., Gynandria Monandria.—Native of Ceylon. Its flowers are yellow, and open in January.—(*Ibid.*, t. 5701.)

HIBISCUS MARMORATUS (Marbled-flowered Hibiscus). *Nat. ord.*, Malvaceæ. *Lim.*, Monadelphia Polyandria.—Native of Mexico. Flowers white, marbled with rose. It bloomed in a stove at Kew in February.—(*Ibid.*, t. 5702.)

DENDROBIUM CUMULATUM (Clustered-flowered Dendrobe). *Nat. ord.*, Orchidaceæ. *Lim.*, Gynandria Monandria.—Native of Moulmein. Flowers white, tinged with purple, and vanilla-scented. Bloomed in September.—(*Ibid.*, t. 5703.)

RAPHISTEMMA CILIATUM (Ciliated Raphistemma). *Nat. ord.*, Aselepiadaceæ. *Lim.*, Gynandria Pentandria.—A climber from Penang; corolla ciliated. Flowers in October.—(*Ibid.*, t. 5704.)

GESNERA EXONIENSIS.—Raised by Messrs. Lacombe, Pince, and Co., Exeter, by crossing *Gesnera fulgens* and *G. zebrina*. Flowers orange scarlet.—(*Floral Mag.*, pl. 381.)

CROTON MAXIMUM.—Brought by Mr. J. G. Veitch from the South Sea Islands. Leaves about a foot long and 3 inches wide, golden, with bands of green radiating from the midrib. (*Ibid.*, pl. 382.)

AMARYLLIS, *Prince Teck*.—Seedling raised by Messrs. Veitch. Colour creamy green, marbled at the edges with crimson.—(*Ibid.*, pl. 383.)

ONCIDIUM CALANTHUM.—Obtained by Messrs. Backhouse and Son, York, from the high Cordilleras of Ecuador. Flowers yellow.—(*Ibid.*, pl. 384.)

DIPLODENIA AMENA.—"This, which we may at once state is a most valuable acquisition amongst stove plants, has been raised by Mr. Henry Take, gardener to R. Nicholls, Esq., Bramley, near Leeds. Mr. Take also raised from seed the lovely *Dipladenia amabilis*, which was sent out in 1865 by the Messrs. Backhouse & Son, of York. This latter was the result of a cross between *D. splendens* and *D. crassinoda*, the former being the male parent, and the seed was sown in March, 1862. This *D. amabilis* is a great advance upon *D. crassinoda*, having a more robust habit, and being of a more brilliant colour, and a freer bloomer.

"Mr. Take is so successful a grower of *Dipladenias*, that we cannot do better than give a short account of his method of growing them. The soil he uses is composed of rough fibrous peat broken to the size of walnuts, with a liberal mixture of sand, adding a few rough bones and good drainage, and potting firm. In the winter the plants are taken off the wires or trellis, and are kept dry in a house of medium temperature. If they are wanted for a June exhibition, the plants are started into growth in November or December at the latest. If for August exhibitions, the plants are started in February. Mr. Take does not plunge the plants, finding, especially in winter, that they do better without. *Dipladenias* do best by keeping them moderately dry until in good foliage. Many of these plants are killed by over-watering. A moist atmosphere of 65° to 70° is best for early growth, gradually increasing to 80° and 85° as the plants progress. They also do best when grown near the glass and well exposed to the light."—(*Florist and Pomologist*, 3 s., i. 73.)

NOTES AND GLEANINGS.

THE Duke of Devonshire's gardener at Chatsworth, Mr. Taplin, having given up his charge, we understand to take the management of an extensive nursery business at New York, he is succeeded by Mr. THOMAS SPEED, gardener to Sir E. S. Walker, Bart., at Berry Hill, near Mansfield. Mr. Speed and his brother, when at Edmonton, were most successful exhibitors of stove and greenhouse plants, and since he has been at Berry Hill he has taken a high position as a fruit-grower, and gained many prizes at the London exhibitions. Last September we had the pleasure of ourselves inspecting the gardens at that place, and were much gratified by the careful and excellent manner in which they were managed, and particularly with the admirable crops of Grapes, Pine Apples, and Figs. The Muscat house, 50 feet in length by 19 in width, was a beautiful sight, the roof being covered with large heavy bunches, and in a late vinery of similar length were bunches of Gros Guillaume from 15 to 18 inches long, of Muscats from 12 to 14 inches, and not long, but broad as well. Lady Downe's and Trebbiano were also in splendid condition. In the wider sphere of action which Chatsworth affords we may confidently expect that Mr. Speed's skill and steady perseverance will achieve still greater results.

— MESSRS. LANE & SON, of Berkhamstead, are now hold-

ing in the Eastern Conservatory Arcade, in the gardens of the Royal Horticultural Society at South Kensington, an interesting display of Spring-flowering plants. It opened on the 9th inst. and will continue till the 18th, when the Society's second Spring Show will be held. Roses, of which the Messrs. Lane have been such frequent and successful exhibitors, form the centre of attraction; other groups, consisting of Azaleas, Rhododendrons, and miscellaneous plants, including fruiting Aucubas, combine to make a gay and excellent exhibition.

— We have to remind our readers that the sale of the beautiful new HYBRID VARIETIES OF COLEUS, raised by Mr. Bause in the Royal Horticultural Society's Chiswick Garden, is appointed to take place at Mr. Stevens's Rooms, King Street, Covent Garden, on Wednesday, April 22nd. The varieties, twelve in number, are decidedly a great advance on any of the forms of Coleus which have hitherto appeared, both as regards size of foliage and richness of colouring, and doubtless the competition for their possession will be very keen.

WORK FOR THE WEEK.

KITCHEN GARDEN.

WHILE young crops are advancing in all parts of the kitchen garden, the ground about them can hardly be stirred too often, to keep an open, pulverised surface, and to destroy weeds with the first warm rains. The young crops after this time will advance rapidly, and unless such as require it are thinned out in time, they will soon be injured. *Broccoli*, sow late spring sorts on a light border, and make a second small sowing about ten days later; at planting time you will have a choice of two sowings. *Beet* may be sown towards the end of the week. *Cauliflowers* may have the glasses removed from them altogether, and see that they do not suffer from want of water. *Kidney Beans*, a few of these may now be planted on a warm border for a first crop, but if they are sown in boxes about the second week in May, and transplanted when all danger of frost is over, they will come in sooner than those planted now in the open ground. *Successional crops* of Peas, Beans, Spinach, Radishes, and other salads, should now be sown oftener, as they will come more rapidly into use through the summer. *Salsify* and *Scorzonera*, sowing may be deferred for another week; if sown too early they are apt to run to seed. Continue to harden off Tobacco plants, Capsicums, Tomatoes, Basil, &c., which should now be strong enough to stand in a close cold frame, to be shut up early in the afternoon for a week or two, after which they should have air night and day till they are fit for planting out. Seeds of any sweet or pot herbs, if not already sown, should be put in forthwith.

FRUIT GARDEN.

If the present dry weather continue it will be advisable to water trees against walls having steep sloping borders, as if the roots become too dry the blossoms will not set well. Previously to watering, fork over the border, repeating the operation at short intervals and in warm days, until it becomes necessary either to mulch the border, or, in cold, late situations, to cover part of it next the wall with tiles for the purpose of causing more heat to be radiated against the trees, so as to forward the ripening of the fruit and young wood. Proceed with disbudding Peach trees, &c., never losing sight of the fact that it is from your summer management, and not from any treatment you can give in winter or spring, that you can insure healthy, fruitful trees. Killing wasps should be persevered in from this time till the end of May. Every wasp now killed is as good as a nest destroyed next August. From the mildness of the winter, if the summer be dry, we may expect them this year in increased numbers.

FLOWER GARDEN.

The weather is now so inviting that it requires a strong resolution to resist the temptation to begin planting out the half-hardy plants in the flower garden. It is well, however, to be very cautious, as there is nothing gained by planting out before the middle of May, while there is every probability that between now and that time we may have some very severe frosts. I have known persons tempted by the fine weather in April to turn out *Calceolarias* and bedding *Pelargoniums*, and the consequence was that several dozens of the plants were killed, while those which survived were very materially injured, and did not bloom till late in the season. Late-laid turf and late-planted trees and shrubs will require constant attention in being watered so long as the weather is dry. If any of the

flowers require a change of soil, let it be done without delay. Complete any extra work in any part of the grounds in order that the men may proceed with the regular garden work. Great care and attention must now be directed towards the Auricula, in order that the trusses may not be drawn up weakly. They should be able to stand erect without support. Continue to thin out all misshapen pips. Polyanthus in exposed dry situations have suffered during the past hot weather. They require but little sun, and that early in the morning. Ranunculuses are fast coming up. Riddle some leaf soil or very rotten cow manure over the beds, and as the plants come fairly above ground press the soil on a dry day closely round the neck of each. Pansies are now making rapid growth, and as they are often exhibited at spring shows, they ought to be carefully shaded and attended to. The florist will visit his beds with candle and lantern in order to detect slugs, earwigs, &c.

GREENHOUSE AND CONSERVATORY.

This is a good time to cut back duplicate chambers so as to have them in flower in succession. Where new conservatories have been lately planted, or old ones re-arranged, the principal object should be to induce the plants to make a vigorous growth early in the season, and to take a strong hold of the new soil; afterwards there will be plenty of time to ripen them off long before winter. For this end you ought to keep the house more like a stove from this time, only giving air from 11 A.M. to 3 P.M. Syringe heavily in the afternoon with rain water if possible, and after thus chilling the house you may give a little air till dusk if the day has been hot, and you may expect the thermometer to be about 50° in the morning. As very little syringing can be done in conservatories in general on account of the flowers, and as flowers do not last so long in a dry atmosphere, some degree of moisture must be kept up by pouring water on the paths or under the stages. Blinds are now indispensable in the middle of the day. After the middle or end of April gardeners begin to change the spring treatment of their greenhouse plants. Hitherto every means has been taken to keep back early growths, and now that all the plants are in active growth and the season so far advanced that any necessary amount of air and moisture can be given in hot weather, the plants may be more encouraged to make a rapid growth, especially young plants. When the evenings are cold the house should be shut up closely, and air should not be given in the morning until the sun heat warms it considerably.

STOVE.

The general potting is now about finished, and many of the first-potted plants have made a considerable growth. Climbers and specimen plants also have received the direction and shapes they are intended to fill up this season. Propagation and seed-sowing are now nearly over in this department, and all the bulbs and other plants at rest during the winter are now in growth, so that only the common routine of watering, giving air, famigating, or otherwise cleaning plants, and training them, will be necessary for some time. Be very sparing of the fire, and keep the atmosphere very moist in fine sunny weather.

FORCING PIT.

Where Cockcombs, Balsams, and other tender annuals are used, this is a good place to bring them forward through their early stages. *Neriums* ought now to have gentle forcing. Camellias to flower early should also be forced to form their buds, as well as the more choice Azaleas which have done flowering. A few plants of *Crassula coccinea* now put into heat will flower some weeks earlier. In short, where there is a good conservatory to be kept gay all the year round, and plenty of plants for the purpose, the forcing pits need never be at rest, and may always be usefully employed.

PITS AND FRAMES.

Many of the annuals which were potted-off early may now be planted out. Where a large stock of dwarf *Chrysanthemums* is required for flower-garden purposes in the autumn, the old stools or plants must be planted out in rich soil at about 4 feet apart, so as to leave room for their being layered in August. Old plants planted now at the foot of a wall in very rich soil will cover a wall 6 or 8 feet high by the autumn, and if properly trained will flower splendidly. Increase, pot-off, and harden your stock of flower-garden plants as fast as possible. Most of these plants are quickly inured to stand out in sheltered places, or under hoops covered over with mats, and the longer they are here the finer they will look after being planted out in the flower garden.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Cauliflowers.—Went over all our earliest Cauliflowers that were and partly are assisted with hand-lights, taking out some of the plants and planting them in a trench, and mulching and earthing-up those left, and then placing the glasses on the raised earth without any other support. But for the sharp frosty mornings (the leaves of the Cauliflower plants being hard on the 10th and 11th), we would have dispensed with the glasses, as the plants by bending out would have received more room. If the cold nights continue we may give a slight covering of litter. Cauliflowers may thus be had very early where they are required to come in before the Broccoli is nearly over; but the latter, however good, loses its attractions after the more delicate Cauliflower is to be had. We frequently adopt a plan here with early Cauliflowers, which may be useful to those who have a stiff soil and little room. A raised bank, sloping to the south and 5 feet in width, just affords room for two hand-lights in the width with a space between them. Lengthwise along the border the hand-lights are placed in these two rows, about 30 inches being left between the first two lights and the next two, and so on. The ground is prepared before the lights are set on the border in the autumn, and generally about nine small plants are pricked-out under each light. These are finally thinned-out to about five in the spring, say in the end of March. All this is in the usual way. The little peculiarity is, that in earthing-up and elevating the glasses as stated above, we dig out a rather deep trench, one spit wide, in the centre of the 30-inch openings. This enables us to give water more freely in stiff soil when we want to swell the heads rapidly. Such a trench left exposed might, in loose soils, be apt to render the Cauliflower too dry; but we prevent that after the above earthing-up by covering the ground and the sides of the trenches with litter, short grass, &c. The sun therefore chiefly acts on the soil where the plants are growing, and if the littered ground absorbs little heat, neither does it part with it, nor with the moisture so necessary for the Cauliflower. With plenty of room we might dispense with the trench, but in many seasons it affords advantages of its own. By moving the litter to the level surface, and placing rotten dung in the trench, we often have early Cauliflower and early Celery on the same narrow border, the trench doing for earthing-up the Cauliflowers, whilst the banks on which the Cauliflowers stood come in for earthing-up the Celery, and the Cauliflowers give shade to the Celery when it needs it at first.

Peas and Beans.—Sowed successions, and staked up the former, it being always of importance to do that work in dry weather, and when the ground is dry.

Sowed more Carrots and the main crop of Beet, just moistening the seeds, also Turnip seed, and sprinkling and working-in with them a little red lead so as to cover them. This will keep birds from them until above ground. We are doubtful then, especially in the case of the Beet, as though the red colour of the lead seems to frighten the birds, the reddish colour of the young leaves is an irresistible temptation to them here, so that for years we have been forced to raise and transplant. If we can get the Beet well up we shall use a net as soon as it peeps above ground, and thus, if possible, avoid the labour of transplanting. Rolled the ground in which Onions, Carrots, and Parsnips were sown. A warm rain now would do much good. The nights have been sufficiently severe to compel us to turn some leaves and place a little rough hay over the heads of Broccoli, and even Potatoes close to walls needed a little protection.

Sea-kale.—Planted on a good piece, and must get another piece ready. Plenty of Sea-kale to go to makes the gardener feel more independent in winter. What trouble we used to have in our young days with huge mounds of dung over Sea-kale, and then turning these mounds without obtaining a dish, and yet some of it as long as one's arm, and so watery as to be fit for nothing! This vegetable, even when strongest, should rarely exceed 7 inches in length. An "ADMIRER" has lately expostulated with us, that if we recommend taking up for winter we might give some advice to those who have no place to take it to, and must have it where it grows. Well, we will show our anxiety to oblige by telling what is the easiest and safest way of securing a supply of this vegetable out of doors in winter. We have lately described how best to obtain it in spring. The best plan of dispensing with the fermenting mounds is to clear away the leaves of the Kale as soon as they decay in the autumn, and cover the ground with litter before

the ground loses the summer heat. By this means, with something like a foot of covering of leaves and litter, fine gatherings may be had from December, and there is no danger of overheating. Pots or boxes will enable you to have it cleaner; but with 10 or 12 inches of leaves and a little sprinkling of litter on the top to prevent the leaves blowing about, we have had fine gatherings, the Kale coming white and sweet out of the leaves alone. For economy of material, however, there is no comparison between this mode and taking up and placing in leaf mould over a hotbed, say from 18 to 24 inches high. A bed 6 feet by 4, and covered with an old box or packing case, will yield a large number of dishes. One of the simplest modes is the following:—Make a dung bed 7 or 8 feet wide, and as much in length, and 15 inches deep. All round the bed build up on it a wall of dung 15 inches high and 18 inches wide; place the plants thickly in the bed; put wattled hurdles across the dung walls, and cover them with litter. Move a hurdle as you wish to gather.

See last week as to watering and using water warmed to all things, especially under glass.

Heated Water.—Lately we alluded to heated workshops in gardens. One essential which we have never had, but which were we in business we would make a certainty, would be a supply of heated water, without being forced to go and borrow what was wanted from the cisterns and pipes in heated houses. The simplest way for securing heated water would be to have a boiler like a wash-house boiler for the purpose. Another good plan would be to have a large cistern out of doors self-supplied, with coils or stacks of piping in the bottom connected with a heating apparatus. With plenty of heated water judiciously used we are convinced that we could almost bid defiance to insects and other evils. Even when we take water from a heating apparatus, that water is anything but suitable for many tender plants, whilst by either of the modes referred to we could have the heated water as pure and wholesome as the cold. Such heated cisterns, or boilers for heating water, may be more general than we suspect; all we can say is, that we know of few places where there is such a convenience accessible to all departments, and to which a man can go and supply himself without entering a house of which another man has the charge. There is endless trouble and mishap when anybody can draw water from a tap or cistern attached to a hot-water apparatus in a house; and often the man who takes the water is tempted to forget to replace it with cold, and evil results are apt to ensue. In a cistern out of doors, covered with wood as a non-conductor, and heated by pipes, the water would always be clean and pure.

Orchard Houses.—In the first the fruit against the back wall has set very thickly and is now swelling, and we are disbudding, or rather shoot-thinning, gradually. The trees in pots in the border of this lean-to house are now also set, but not nearly so forward as those on the back wall. We refrained until lately from sprinkling these trees in the border; but in very hot dry days we sprinkled the earth floor or border with the syringe, that the vapour thus gently raised might prevent the blooms getting too dry. As a flower show, these pot trees have been pictures of beauty. The trees against the back wall have been gently sprinkled in the afternoon before shutting up the house. This shutting-up has varied with the weather. In this bright weather we shut up rather closely about half-past three, not minding if the thermometer with sun heat should rise to 80°, or two or three degrees more, as it will fall gradually. Here, too, after giving a little air at the top early, we increase the ventilation by degrees, as we shall want this house to succeed the Peach house forced in the usual way. In the later house we give air early, and by breakfast time very liberally, and in fine mild evenings do not shut up until late, and that chiefly for security. We have a few Cherries in the first house, and to do them justice, though we shut the house earlier, we leave a little air opposite them all night. If we want to have Cherries early in pots, we find it best to let the pots stand in the cooler more airy house until the fruit is set, and then move them into the other to swell more quickly in the higher temperature procured by giving less air and shutting up earlier. The shutting-up of these houses with large squares and open laps is different from shutting-up closely, where there are no laps or close laps. In the latter case, unless in frosty or very stormy weather, we would leave a little air on constantly; for a very little, even such as that which comes through open laps, will prevent anything like a stagnant atmosphere.

We thus treat the two houses differently, because it would only be waste to have bushels or barrowloads of Peaches

ripening at the same time. These orchard houses were made by merely glass-fronting an old wall, and without saying a word against span-roofed houses, there is an advantage in having a back wall in cold places, and where no artificial heat is given; and even in these lean-to's fine crops can be obtained, early vegetables forwarded, and winter ones protected. If such work were done as a commencement, we should concentrate early kinds in the first house, and late kinds in the late one, to prolong the season of fruit-gathering. Even for amateurs with only one house, and that not a large one, we would have a division in it, and then by the selection of kinds, and the keeping one division much more open and airy than the other, there would be a great difference in the ripening.

Questions come to us almost every week, "Can you recommend the pot system of culture?" As a matter of economy in labour, &c., we say, No; as a matter of pleasure and giving much variety of produce in little room, we say Undoubtedly, yes, after having had a fair experience with all kinds of fruit trees except Apricots, with which we have as yet done little, but which we have no doubt would do equally well with others when tried, but before doing much with them we would study the doings of our veteran instructor Mr. Rivers. To all amateurs who feel a pleasure in attending to their fruit trees or houses the pot system is invaluable, enabling them to have much variety in little room, just as the cordon and small pyramid, or small bush system of fruit-growing will enable the holders of small gardens to have a great variety of fruit out of doors.

Our chief objections to pot trees arise from the great amount of watering required, and to lessen this we plunge the pots three-quarters of their depth in the ground, and we have just surfaced the soil in the pots in one house with a couple of inches of old mushroom dung, and a little soot in it, and will repeat the process as that disappears. This not only helps to enrich the soil, but renders such frequent waterings unnecessary. Last season we put a rim of thin turf round the sides of the pots. The plants have not been potted for a number of years. Amateurs who like neatness, might have strips of zinc from 2½ to 3 inches deep, which they might fix inside the rims of the pots before applying the mulching. This mulching, it will be thus understood, is considerably above the level of the rim of the pot, but that with ordinary care does not interfere with proper watering. Some recommend fresh dung, as fresh horse droppings, for the purpose, but with those who are unpractised this may be easily overdone; and if not well heated previously there is a likelihood of a good many seedling oats appearing, all of which must be pulled out; and as a general rule gardeners have enough to do without making work in the weeding of pot trees. We forget how often we mulched our trees last year. The mulching soon disappears, but its effects are seen.

In the cooler house the Peaches, &c., have just set thickly and healthily against the back wall. In pots in front, Plums are setting; Apricots set and beginning to swell; Peaches beginning to set, and Cherry trees only too much of a mass of bloom, and noisy with the hum of numberless bees, which have taken the dispersing of the pollen dust entirely under their care, and saved us all trouble in this direction. This house contains plenty of Strawberry plants in pots, &c., which except at the front will have to be moved before they come into bloom, as they would be too shaded to set freely on the ground. The watering of these and other things has kept enough of moist vapour in the atmosphere of the house without resorting to syringing; but in another week or so we will lash the back wall, and the fruit trees when it can be done with safety.

In the first or closest-kept house Vines are just swelling their buds, showing that they will come out in shoots ere long. In the late vinery, filled with bedding and other plants, and kept as cool as possible, with air on at night until the late frosts, the young shoots are about 2 inches long; and though we will keep them cool for some time longer, these shoots must have no check, as that would injure the young branches. All the roots are in an outside border unfortunately, slightly protected in winter with litter, but unprotected for some time past.

We slightly fumigated the Peach house for the first time, as a few whitish green fly appeared on some rows of Strawberries, and besides injuring them might have gone farther if let alone. The garden engine played on the glass roof to keep the smoke in, and thus a less quantity of tobacco paper does than when such a precaution is not adopted. When smoking is resorted to as soon as a few insects appear they are easily destroyed when young—a matter that should never be forgotten, as the older

the insects the more difficult they are to kill, and instead of one you may have many generations of them to battle with if you procrastinate.

ORNAMENTAL DEPARTMENT.

Mowed the lawn where most conspicuous after giving it a good rolling. Lately the grass has been too crisped in the morning for mowing, as the ice would gather on the sedge, and besides, cutting under such circumstances is very apt to blacken and injure the lawn. There has been little growth for the last ten days, the cold of the night counteracting the sun heat of the day.

Proceeded with putting out under temporary protection bedding plants, and pricking-out seedlings. We have been obliged to use a little straw and laurel boughs over cloth, mats, &c., on flat earth pits, as the lower and flatter they are, and the nearer the plants are to the protecting medium, the more liable are they to be injured. The dry days have obliged us in some cases either to syringe or to water such plants at mid-day that their foliage might become perfectly dry before night. We would have avoided this, and did in all cases where the plants would hold their own, as, merely on the question of warmth, we prefer the soil to be rather dry about the plants instead of wet, and hence the watering at the roots at planting them out; and somewhat dry soil on the surface is much preferred for all such purposes to watering over the surface. Such drying days, however, rendered syringing or watering necessary in some cases against our will. The weather has been too cold to move the covering, unless for the above purpose, and then only for a short time. Plants under calico wanted no such watering and received none, and most likely will need none for a couple of weeks, after which time we will expose them partly in fine days, the better to harden them off for the open air. Of course for all such purposes water at 70° or warmer, applied in the middle of the day, is better than cold water from a tank or well, and hence the importance of being able to get warmed water as already alluded to.

Sowed the most of our half-hardy annuals—as Zinnias, Stocks, Asters, &c., in pots, and placed them under glass on a slight hotbed. Made up a rough hotbed that will yield a little heat, on which we will sow more, and even some hardy annuals, to be protected for a time, and then raised singly or in patches when well hardened-off. The most of the Asters when well up and hardened will be pricked off in an earth pit, where they can be protected with boughs, and other means for a time. It is always better to sow late, so that the plants may have justice and receive few checks, instead of sowing early, and then letting them be starved and dwindled before planting out. Even as respects hardy annuals, unless sown in the autumn and just established, but low in growth before winter, little is gained by sowing the hardiest out of doors before the end of March. Many seedlings that are hardy when a few inches above the ground, are very tender just after germination has taken place.—K. F.

TRADE CATALOGUES RECEIVED.

George White, 3, Moss Street, Paisley.—*Catalogue of Florists' Flowers, Greenhouse, Herbaceous, and Bedding-out Plants.*

Adam Forsyth, Stoke Newington, London, N.—*Descriptive Catalogue of Chrysanthemums, Dahlias, Tropaeolums, &c.*

T. Sampson, Preston Road, Yeovil, Somerset.—*Catalogue of Bedding Plants and Roses.*

COVENT GARDEN MARKET.—APRIL 15.

TRADE continues dull, and the supplies are in excess of what is required, especially in foreign imports, and clearances cannot be effected at former rates. We may, however, look for some improvement when the holidays are over. The Potato trade is rather heavy, and prices are lower. New Potatoes from Lisbon bring about 6s. to 8s. per doz. lbs.

FRUIT.

		s.	d.	s.	d.			s.	d.	s.	d.
Apples	$\frac{1}{2}$ sieve	3	0	5	0	Melons	each	0	0	0	0
Apricots	doz.	0	0	0	0	Nectarines	doz.	0	0	0	0
Cherries	lb.	0	0	0	0	Oranges	100	3	0	7	0
Chestnuts	bush.	10	0	15	0	Peaches	doz.	0	0	0	0
Currents	$\frac{1}{2}$ sieve	0	0	0	0	Pears (dessert) ..	doz.	4	0	8	0
Black	do.	0	0	0	0	Pine Apples	lb.	8	0	10	0
Figs	doz.	0	0	0	0	Plums	$\frac{1}{2}$ sieve	0	0	0	0
Filberts	lb.	1	0	0	0	Quinces	doz.	0	0	0	0
Cobs	lb.	1	0	0	0	Raspberries	lb.	0	0	0	0
Gooseberries ..	quart	0	0	0	0	Strawberries ..	per lb.	10	0	16	0
Grapes, Hothouse ..	lb.	12	0	20	0	Walnuts	bush.	10	0	16	0
Lemons	100	8	0	12	0	do.	per 100	1	0	2	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes..... doz.	3	0 to 4	0	0	0
Asparagus..... 100	6	0	10	0	1
Beans, Kidney..... 100	1	6	0	0	1
Beet, Red..... doz.	2	0	3	0	0
Broccoli..... bundle	0	6	1	6	0
Brns. Sprouts ½ sieve	0	0	0	0	0
Cabbage..... doz.	1	0	1	6	0
Capiscume..... 100	0	0	0	0	0
Carrots..... bunch	0	6	0	8	0
Cauliflower..... doz.	2	0	5	0	0
Celery..... bundle	1	6	2	0	0
Cucumbers..... each	0	9	1	6	0
Endive..... doz.	1	0	0	0	0
Fennel..... bunch	0	3	0	0	0
Garlic..... lb.	0	8	0	0	0
Herbs..... bunch	0	8	0	0	0
Horseradish .. bundle	2	6	4	0	0
Leeks..... bunch	0	3	0	0	0
Lettuce..... per score	1	0	1	6	0
Mushrooms..... pottle	0	9	1	6	0
Musd. & Cress, punnet	0	2	0	0	0
Onions..... per bushel	3	0	5	0	0
Parsley..... per sieve	3	0	4	0	0
Parsnips..... doz.	0	9	1	0	0
Potatoes..... bushel	4	6	5	6	0
Kidney..... do.	4	0	6	0	0
Radishes doz. bunches	0	9	1	0	0
Rhubarb..... bundle	0	4	1	0	0
Savoy..... doz.	0	0	0	0	0
Sea-kale..... basket	0	9	1	6	0
Shallots..... lb.	0	8	0	9	0
Spinach..... bushel	2	0	3	0	0
Tomatoes..... per doz.	0	0	0	0	0
Turnips..... bunch	0	4	0	6	0

TO CORRESPONDENTS.

.. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix upon the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (*C. P. Gibson*).—Keane's "In-door Gardening" will suit you. It contains directions for cultivating greenhouse plants throughout the year. You can have it free by post from our office if you order it and enclose twenty postage stamps with your address.

BERRIES (*M. C.*).—They are of the *Aucuba japonica*. If the seeds in them prove fertile, but we think they will not, there must be a male plant in the neighbourhood; or some of the blossoms on your very old plants must have produced stamens. All your specimens are of *A. japonica*.

MEXICAN MAGNIFICA (*G. D.*).—It belongs to the natural order Melastomaceae, and to Decandria Monogynia of the Linnean system. It is a native of Manila. The flowers are pink. It was introduced by Messrs. Veitch, in 1859. A portrait of it is in the "Botanical Magazine," t. 4533.

SORGHUM TATARICUM (*Wye*).—Any seedman could supply seeds; but it is entirely useless to attempt to cultivate it in this country. We are glad you were not swindled as others were.

VINES MILDEWED (*John H.*).—The Vine shoots are infested with mildew. Dust all the infested parts with flowers of sulphur, paint the open places in the wall with sulphur. Give more air even if you require more firing. Taken in time no great harm will be done. It is much more serious when the bunches are affected.

FLOWER-BED PLANTING (*St. Dennis*).—We would arrange your fine-leaved Pelargoniums thus—Mrs. Pollock centre, then Italia Unita, and outside Sunset. To make it more complete we would place a string of *Cerastium* round the outside, and carpet all the rest of the bed with the dwarfier blue *Lobelia*. We would not turn out the Roses in pots in the greenhouse until the middle of May.

WINDOW GARDENING (*C. Hall*).—Ferns, especially in a Fern case, will do well in a north aspect inside a window. Balsams may be potted singly when they are 3 or 4 inches high. You must keep them inside the window until June. Use 3 or 4-inch pots at first, and when filled with roots transfer the plants to 5-inch pots, which are large enough for Balsams in windows. All plants will bloom longer in such an aspect, but they will not grow so sturdy nor knot so well for bloom as if grown where the sun's rays would reach them.

FIG TREES CASTING THEIR FRUIT (*A. S. K.*).—Some kinds of Figs are much given to throw their first crop. The Singleton generally fruits best on the current season's growth. In damp houses there may be something in what you say as to the atmosphere being too damp, but as a general rule, the falling of the fruit is rather owing to dryness at the roots. Fig trees in pots, therefore, ought either to stand on or in the ground, and have a saucer to stand in, the bottom of which should be kept moist. We shall be glad to receive your remarks on Lady Downe's Grape.

CISTERN IN A GREENHOUSE (*A. L. L. W.*).—Circumstances alter cases. You speak of an open cistern in your greenhouse, and that is very different from having a tank all the length of the house and merely covered with boards, with an opening between every two boards. As mildew appeared we think that this open tank was partly the cause, and, therefore, we advised means to be taken to prevent the vapour rising. Of course, in that case, we would draw water by means of a pump, or by an opening large enough to get a pail in, the opening to be covered by a board. We have had open cisterns like yours in a house, and without doing any harm, but we also found harm thus done; and if a cistern is large, a great body of cold rain water passing at once into it very much cools a house. We think, therefore, a wooden cover, partly moveable, would be useful over such a cistern merely as a preventive of evils.

CHANGING THE COLOUR OF PRIMROSES (*Trusty Brandy*).—We have heard that soot, also cow dung, will change the colour, but we do not remember

that turning them upside down was a necessary part of the process. Mr. Abbey informs us that when a boy he planted a number of common Primroses (*Primula acutis*), and they were in full flower at the time. Advised by an old woman he scattered a quantity of soot over and around each in the same manner as is done to prevent the ravages of slugs, and these plants in the following year produced pale reddish lilac flowers. We should be obliged for particulars as to the change of colour, not only of Primroses, but other plants. As we have common Primroses which were planted some years ago, and many of these, or their offspring, now produce reddish flowers of various shades. Very many retain the natural colour of their flowers, but the red-flowering plants are not so vigorous as those retaining their original character.

ORCHARD TREES INFESTED WITH RED SPIDER (*W. M.*).—The specimens sent are severely attacked by red spider; but we do not agree with you as to your not being able to syringe the trees now the blossom is dying off. We would advise your syringing the trees early in the afternoon when there is mild weather and no likelihood of frost at night. The fruit set, you may syringe the trees with 2 ozs. of soft soap dissolved in a gallon of water, applying it in the evening, and syringing in the morning with clear water. Keep the trees well supplied with water at the roots, and apply a top-dressing of rich compost to the surface of the pots or border.

FRUITING PINE PLANTS (*Idem*).—If you now obtain fruiting Pine plants it is probable that if strong fine plants they will fruit this summer; but we could not say when unless we saw the plants. They will not require potting now. If they do not show fruit before August, or are not then showing, you may pot them but without much reduction of the ball, merely taking off the lowest leaves, potting lower, and removing any of the soil not occupied with roots.

ASPHALT GARDEN WALKS (*Robt. Orton*).—Sift the ashes when dry with a half-inch sieve, form them into a heap like those which bricklayers make in mixing mortar, make a hole in the middle, and into it pour boiling coal tar. Mix to the consistency of mortar, and when cool put the mixture to the thickness of 3 inches where the walk is to be. The ground should previously be made level and of the desired form, keeping it highest in the middle to throw off the water, and it should be made so high next the grass or soil that when the asphalt is put on it will be level with it or very little below it. Put on the asphalt when the ground is dry, and after the surface has been made even sprinkle it with enough spar or fine-washed gravel to give the walk the appearance of being of gravel. When the asphalt has become firm enough to bear the roller, roll it well and make it quite firm. Avoid walking upon it until it has become hard. In a few days it will become very solid.

BANANA CULTIVATION (*R. H. A.*).—The Banana can be, and is cultivated in England successfully in most large establishments. It requires a house with a temperature of from 50 to 55° at night in winter, and one of from 60 to 65° by day from fire heat. In summer it should have a temperature of from 60 to 65° at night, and 75° by day, with a rise of 10°, 15°, or 20° with sun. In winter it should be kept rather dry at the root, but not so dry as to affect the foliage; but when growing it can hardly have too much water if the soil is open and the drainage good. Liquid manure may be given copiously and at every alternate watering. A moist atmosphere should be maintained by frequently sprinkling every available surface with water. Air should be freely given, but not so as to cause cold draughts. For compost turf should be taken from a pasture where the soil is a good, rich, but not strong loam, cutting it 2 inches thick; place it in layers, first a layer of turves, and then a layer of fresh cow dung or sheep droppings an inch thick, then turf followed by dung, and so on, the turf being placed grass side downwards. This in three months will form an excellent compost, and should be chopped with a spade roughly, adding about one-sixth of sharp sand.

SELECT CONIFERS (*W. G.*).—*Picea nobilis*, *P. Nordmanniana*, *P. pinsapo*; *Abies Douglasii*, *A. polita*; *Thuja Lobbi*; *Thujaopsis borealis*; *Welling-tonia gigantea*; *Pinus cembra*, *P. excelsa*; *Cupressus Lawsoniana*; and *Thuja orientalis*.

APPLYING MANURE WATER TO LILIUms (*Idem*).—When they are growing freely liquid manure may be given to these plants at every alternate watering. The best that we have tried is made by pouring thirty gallons of water over a peck of sheep droppings, stirring it well up before using it. Half an ounce of guano to a gallon of water makes a very good liquid manure, which may be applied once a week.

NEPETA TETRACOLORATA (*W. H.*).—We have not tried this *Nepeta* for bedding purposes, and do not think it would prove suitable as an edging, it being of stronger growth than *N. napolitana*, and not so compact; the flowers, however, are more deeply coloured. Flowering profusely from July to September, it might be useful as a bedding plant.—G. A.

ROSE TREES INFESTED WITH APHIS (*Rosa*).—The best means of ridding plants of the green fly or aphis is to dust them with ground tobacco, applying it with a tin pepper box, which may be had of any tinman or ironmonger. The Rose trees should first be syringed with water, and then dust them with the powder, which adheres to the shoots and leaves better than were it applied to the plants in a dry state. The ground tobacco should be made from duty-free tobacco.

PICEA PINSAPPO FOR AN AVENUE (*Robt. Orton*).—*Picea pinsapo* is suitable for an avenue, but is of slow growth. *Picea Nordmanniana* is a more rapid grower. Both succeed on a clay soil, but are impatient of stagnant water.

VINES BLEEDING (*Wye*).—The best thing to stop the bleeding of Vines is Thomson's styptic. The Vines should have been pruned earlier, and then the bleeding would have been less, if not altogether prevented.

POTATO FOR LIGHT GARDEN SOIL (*Idem*).—The Lapstone is a first-rate Potato for light soil, and a good cropper. If you require a winter sort Arrowsmith's Seedling would probably suit you.

HERBACEOUS PLANTS FROM SEED (*N. E. H.*).—You may sow the following from now to July, but the earlier the better. They should be sown in pans or shallow pots well drained, placing over the drainage a layer of the roughest parts of the compost, which should be sifted. The compost may consist of two-thirds fibrous loam and one-third leaf mould, with one-sixth of sand. Fill to within half an inch of the rim, or nearly to the top if for small seeds, level the surface, and sow the seeds rather thinly, covering them very lightly with fine soil. None should be covered with more than a quarter of an inch of soil, and some with less, accord-

ing to their size. Place them, after giving a gentle watering, near the glass in a cold frame or pit, and keep moderately close, and shaded from powerful sun, so as to have the soil constantly moist, and yet avoid heavy waterings. When up keep the seedlings near the glass and admit air freely, attending well to watering; and when large enough to handle prick them out in a well-prepared bed in the open air, shading from sun until they become well rooted. In the autumn, or early in spring, move them with a ball of earth to where they are to remain. We name them in alphabetical order:—*Alyssum saxatile* compactum, *Aconitum coronaria*, *Antirrhinum majus* vars.; *Aquilegia caryophyllodes*, *glandulosa*, *sibirica*, *rosea* violacea, *Skinneri*, and *Wittmanni*; *Arabis alpina*, *Aubrieta deltoidea* grandiflora, *A. græca*, *Bellis perennis* double vars., *Campanula carpatica*, *C. carpatica* alba, *C. pyramidalis*, *Commelina colestis*, *Dolichium formosum*, *D. grandiflorum*, *D. Heidersoni*, and double vars., *Digitalis gloxinoides*, *D. purpurea* and its white variety, *Lathyrus latifolius* and white variety; *Lupinus arboreus*, *L. polyphyllus* and white variety, *Lychnis chalcedonica*, *L. chalcedonica* alba, *L. Haageana*, *L. Sieboldi*, *Lythrum roseum* superbum, *Myosotis azorica*, (*Oenothera macrocarpa*, *Oxalis tropæoloides*, *Pentstemon gentianoides*, *coccineus*, *Murrayanum*, ovatum, pulchellum violaceum, and *Wrighti*; *Phlox decussata* varieties, *Potentillas*, *Primula cortusoides*, *Pyrethrums*, *Saponaria ocyroides*, *Silene Schaffa*, *Rocket*, purple and white; *Wallflowers*, *Sweet Williams*, *Pinks*, *Carnations*, *Picotees*, *Hollyhocks*, *Brompton Stocks*, and *Canterbury Bells*.

PLANTING A VINE (O. P.).—We should not hesitate to put the plant out this year, but we would not do so until June, yours being an outside border. You may then plant it out, as the soil will have become warm, spreading out the roots and giving a good watering. The foliage should be shaded from bright sun, and the house kept close and moist until the Vine recovers from the planting, then expose it fully. You will gain a year by planting in June.

PRUNING CACTI (A Somersetshire Curate).—You may cut out the old stems, leaving the best growths. They are improved by thinning out the old bare growths, otherwise the pruning of Cacti is not to be recommended. Do not shorten the young growths, nor those of some years' growth, but merely thin them out if too close together.

LATE KITCHEN APPLES (C. N. B., Llanelli).—*Alfriston*, *Beauty of Kent*, *Dumelow's Seedling*, *Northern Greening*, *Royal Russet*, *Hanwell Souring*, *Winter Pearmain*.

FORCED STRAWBERRIES (J. W., jun.).—The *Marguerites* were very fine,

weighing 1 oz. and three-quarters of an ounce each, and excellently flavoured. Our correspondent says he finds this variety one of the best for early forcing.

SLATE EDGING FOR BEDS.—"E. T." wishes to know if slate edging can be procured for beds in the place of Box or Grass edging.

ALLURING ROOKS—Dog Violet (A Mourner).—No bird is more obstinately whimsical in selecting his nesting place than the rook. "It's no use, ma'am," said an old forester, "if they prefer a birch broom they'll build in that rather than in them Elms you wishes them to take to." We have known a nest of young rooks moved into a tree some distance from a rookery. The old birds followed it, and the next year rooks built in that tree. The same result was obtained by having rooks' eggs hatched by magpies in the magpies' nest. *Dog-Violet* seems merely to mark inferiority, and is so prefixed to show that it is not so meritorious as the fragrant species. The *Dog-Rose*, *Dog-Chamomile*, are similarly inferior to the plants of the same name without the prefix.

MANURES NOT ORDERED (A Constant Reader).—Continue to refuse to receive the box, and tell the railway officials to return it to the Company.

VARIOUS (A. B., Everley Lodge).—We are of opinion that rust on Grapes is caused by cold currents of air passing suddenly over the berries that have been shut up in a warm moist atmosphere; but too many skilled men differ upon the subject for us to venture to speak authoritatively. The "warty" appearance of the Vine leaves is really a consequence of vigorous root-action. Your Mushrooms are attacked by the parasitical fungus mentioned by Mr. Berkeley, as noticed in page 222. It renders the Mushrooms unwholesome, probably poisonous.

NAMES OF PLANTS (A Gardener).—1, *Franciscea eximia*; 2, *Polystichum angulare*, (*Rustic*).—*Antirrhinum* (common garden sport), and *Peperomia elustefolia*, (*T. P. Fernie*).—*Scopolia carniolica*, (*A. H. D.*).—*Polypodium vulgare* (common condition). (*B. C. H.*).—*Astilbe (Hoteia) japonica*, (*J. S. Gordon*).—1, *Polystichum angulare*; 2, *Adiantum* sp.; 3, *Adiantum atropurpureum*, ovatum, *Doodia lunulata*; 5, *Aspidium aculeatum*; 6, *Pteris*; 7, *Abutilon striatum*. (*J. S. E.*)—1, *Cheilanthes hirta*; 2, *C. lendigera*. The *Coccoloba* may be obtained through any nurseryman who advertises in this Journal. (*H. M. K.*).—*Pteris hastata*; *Lustrea Flix-mas* (garden variety). (*P. J. N.*).—Your flower is *Fritillaria meleagris*, a native of England, and popularly known by the various names of *Chequered Tulip*, *Snake's-head*, and *Guinea-hen Flower*. (*M. C.*).—*Orbanche elatior*, or *Tall Broom Rape*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending April 14th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 8	29.530	29.385	57	35	50	48	S.W.	.07	Overcast throughout; heavy showers; boisterous.
Thurs... 9	29.730	29.598	50	28	40	48	N.W.	.06	Overcast, cold wind; slightly overcast; very dark.
Fri... 10	29.010	29.716	52	27	49	46	S.	.00	Clear and fine; fine; cloudy, but fine at night.
Sat... 11	29.902	29.955	50	26	48	46	S.W.	.00	Overcast, fine; overcast; fine at night.
Sun... 12	29.960	29.867	45	25	47	45	N.W.	.00	Cloudy; overcast; fine; very cold at night.
Mon... 13	29.936	29.951	53	36	46	45	N.E.	.00	Overcast, cold wind; clear and fine; slightly overcast.
Tues... 14	30.223	30.111	56	25	47	45	S.W.	.00	Cloudy; fine; fine and very dark at night.
Mean	29.908	29.738	51.86	28.85	48.00	46.14	..	0.13	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

REARING POULTRY PROFITABLY—DORKINGS ABOVE ALL.

A CORRESPONDENT, "R.," wishes us to condense many former numbers, to give all the instructions for improved poultry from Ireland, for profitable poultry everywhere.

"So long," said the quack doctor, "as there remains one person unconvinced of the efficacy of my pills, so long is it my mission to preach their merits." It was a long job, and so is ours. We thought we had said all that could be said on profit-making by poultry, and that every one had read it. It appears not, and we therefore begin again.

Let us begin with "R." "I have spared no expense to secure the best birds to be had at the Royal Society's Shows. I have the following breeds—Dorkings, Dark Brahma Pootras, Buff Cochins, and Black Spanish." We will tell "R." what struck us when we read this. Comparing the pursuit of poultry to a lifetime, we thought of an old proverb—

"Did youth but know what age would crave,
How many a penny it would save."

When "R." speaks of "availing herself of the experience of others, rather than risk her own inexperience," it tells us of heavy prices paid, and that have to be returned before the balcyon days of profitable poultry begin. We fear that she begins very expensively, and must sell both show and table birds before any return will be seen.

Profitable poultry, if the market is the dependance, should be Dorkings. After every experiment this breed reigns supreme as a table fowl. The French varieties are good, but they are

non-sitters, and they have black legs; Cochins and Brahmas are hardy, but they lack breast, and have yellow legs; Spanish are delicate to rear, and they have black legs. They, too, are non-sitters.

The Dorking is not difficult to rear, it has a full breast and white legs, is apt in fattening, is an average layer, is an excellent sitter and mother—in fact, has all the attributes of usefulness in itself.

But, having the stock, you must turn it to account. Rear some early chickens of each breed, and then, if you depend on supplying the market, put all your Dorking eggs under the other hens, and sell theirs. If you can advertise them as from birds that have taken prizes, you will be able to sell them for sitting. This will be profitable. From each breed hatch some early chickens. They are worth much more than late ones.

Like William Cobbett, we wish to be very plain, not only to write so that we can be understood, but also so that we cannot be misunderstood. We would not be thought to be speaking lightly of other breeds. They have their merits. They are hardy, and do not consider weather. They are not particular as to food, but they require plenty of it. They are good layers, and if eggs only were required you might keep them advantageously; but for table purposes, in any market Dorkings will make a return of thirty per cent. more for their food than any other breed.

It is a mistake to say people are not so particular. We have never met with any of those unsophisticated places where food was food irrespective of quality; and we are quite sure from long experience, that where Dorkings can be bought for the table, other breeds will only be saleable when no Dorkings are left for sale. We are speaking of local markets; but when we come to the general mart in London, we have to do with those rules which, having for object to increase the value of

goods, should be studied by every one interested in the subject.

We must take it for granted the birds are young and well fattened; then the killing and packing come in order. The necks of poultry should be broken, the birds picked while warm, and the body being placed in a proper position, thighs brought back, and legs doubled down, it should be allowed to stiffen in that form. As the poultry sent from Ireland to Leadenhall has to compete with that which is killed in the home counties, and as freshness is a great desideratum, advantage must be taken of everything that is favourable to it. It is, therefore, necessary that the bird should be thoroughly fasted before it is killed. It should be kept *totally* without food or water for the previous twelve hours. It will then keep well to reach London.

Dead fowls should be packed in wicker or osier baskets; they should be laid in rows on stiff wheat straw; they should be covered with the same, so that it may form a layer between them and the next row. Next, they must be sent at the time when they make the best return—that is, in the spring of the year, from March to June.

Dorking fowls fattened, killed, and sent to London young and fresh, packed as we have described, and sent in the spring, will be "profitable poultry."

PACKING EGGS—HATCHING—SWINDLING.

SEEING a week ago a communication from "L. B." regarding the evil effects of packing eggs in bran, I have thought it well to say a few words on the subject, as this substance is of all others in the most general use. I quite agree with your correspondent that of all materials perhaps the very best is soft dry moss, but few of us are able to obtain it. Like "L. B.," also, I have from time to time had eggs broken which came to me in bran, and hence for some time I gave it up; but the cleanliness, handiness, and other qualities of bran make it so much more convenient for most persons, that I was led to look into the causes of non-success, and now pack eggs in it with hardly a failure.

I have found that if bedded loosely in bran, the eggs will always rise towards the top, but very seldom do so if the packing be rammed in tightly, and the box will be found to contain very much more than could be expected if so rammed down. The safest way, however, is to put in first a layer, which when pressed down will be about an inch deep, and cover this with a piece of stout paper the size of the box; on this more bran should be placed in which the eggs are bedded, another sheet of paper put on, and above the paper a third layer of an inch deep. The use of the paper is obvious—the eggs cannot be forced above or below the sheets by any means, and since I adopted this plan I have seen no need of a better. The top and bottom layer may consist instead of bran, of hay, chaff, or bran and chaff mixed, which latter indeed forms a better material for the whole; but bran alone answers perfectly thus guarded, and is the most portable and cleanly material which can be kept about, besides forming part of the regular poultry stores in most establishments. It is, however, very important to pack tightly, and the plan I adopt is to cut sheets of stout paper to the width of the several sides of the box, and place them up the sides, projecting some inches upwards. The bran or chaff can then be piled on an inch or two above the top of the box, and pressed down, the paper keeping it from running over, and at length the overlap can be folded neatly over, and will keep all within bounds, without spilling a morsel.

Another way of keeping eggs from rising is to screw them up in paper in such a way that every egg has a little "screw" an inch long both at the top and bottom. This will act as a spring, and keep the egg in place, but is not so certain as the other.

With regard to hatching eggs, failure is frequently attributable to other causes than either packing or dishonesty. My own hens' eggs till quite lately have not often given more than four out of ten (it will be seen I am not seeking to puff them), and I should have attributed this to packing, but that my own success has been about the same. The fact is, that with large cocks of large breeds, such as Brahmas or Cochins, early eggs are very seldom so fertile as eggs laid later in the season; while from a smaller bird I am using, on account of his beautiful points, nearly all have hatched. Matters are coming right now; but the rule holds good generally, and it is practically the price you have to pay for getting size and early chickens.

I have also, this year, found an unusual number of chicks which have died in the shell at apparently about a week old. I have many complaints from correspondents that they have found it a very bad hatching season, and not very long since had a letter from our most successful exhibitor of Partridge Cochins stating that he had not hatched a single chick from his first ten hens! I should hope few of your readers are quite so badly off as this, but it will be interesting if some of them will let us know how matters stand. The fact is, that in cold weather eggs are very much more easily chilled than many people believe, and that what would be called a fairly steady sitter will in early spring fail if the weather be cold. In such weather even half an hour's absence from the nest is too long, and I am quite certain often proves fatal, though double that time will not kill the chicks in the eggs in May.

Now for "J. L. L." and his boiled eggs. We have all heard of these things before, and we shall hear of them again until some one has the manliness to enforce the penalty. "J. L. L." has recovered his money, and therefore the knave will "keep the pot boiling" with impunity. I venture to ask, Has "J. L. L." done his duty? Having clearly ascertained that there is a scoundrel who can boil twelve eggs, and then sell them for 12s., he publishes it in "our Journal"—but why? Was it to recover his 12s.? or have not we, its other readers, a moral right to the rascal's name, that he may be metaphorically kicked for the dirty deed, and others cleared from unjust suspicion?—NEMO.

JUDGING GAME FOWLS.

In awarding the cups at exhibitions, judges are too prone to give them to stags, or cockerels, and to pullets, instead of to full-grown birds, and at the last two Birmingham Exhibitions cups were given to stags at the last Show, and to pullets at the last Show but one, when there were full-grown birds of equal merit there exhibited; and in the opinion of the best judges the full-grown birds are more entitled to cups than any birds not full-grown.

In Brown Reds, prizes now go too much to the willow-legged cross-bred birds with red combs and faces, which are bred from Black-breasted Reds and Duckwings, instead of to the pure-bred, blackish-legged, gipsy-combed, true Brown Reds. Prizes also go too much to the black-bodied Brown Red hens, which is excluding the original type—the Dark Brown hens with the streaked and pencilled bodies, backs, breasts, and wings, and dark red necks, instead of yellow necks, which are certainly the most beautiful specimens of the Brown Red hens, if with gipsy combs and faces. Some judges fancy that only the black-bodied hens are true-bred, and that the pencilled, streaked birds are crossed from the Partridge hens, which some are; but this cross is easily discovered by the lighter or willow-tinged leg, the lighter eye, lighter beak, and lighter neck-hackle, and redder comb and face; whereas, the true Brown Red hens show none of these signs. Brown Reds should be essentially the Dark Brown Reds in both cock and hen, as their name clearly denotes. The black-bodied Brown Red hens, if with black breasts, not streaked, which some have, are crossed with the old breed called the "Black Reds" (not the true Black-breasted Reds), and such hens when black-breasted will throw black-breasted cocks, at times very dark in colour, almost black, with blackish wings and breasts, which the true Dark Brown hens will not do. The true-bred, streaked-breasted, pencilled Dark Brown Red hens will throw cocks with both clear red-brown brick breasts, and also with the brown-streaked breasts, but such hens as throw black-streaked-breasted cocks, are from the Black-breasted cross invariably. Black-bodied Brown Red hens have been produced from the original type by continued domestication, as the wheaten and fawn-breasted Dark Brown hens have originated in like manner from the true original Partridge hen in the Black-breasted Red breed. The pencilled or streaked Dark Brown Red hens, very dark though never black, with streaked breasts, are the original and primitive strain, and will throw both to the Ginger Brown Reds and also to the black-bodied hens, thus throwing both ways as the strain may incline. The willow-legged Brown Reds, though often fast birds, are only cross-bred, and being bred from softer birds, can never be so hard, or so game, or so good, as the true-bred, blackish-legged, Brown Red are, as the willow leg is well-known to show softness, while the true dark or black leg is equally well known to be a sign of hardness. Nor does the true Brown Red plumage show itself so much in the yellow-

skinned, willow-legged Brown Reds, as it does in the true white-skinned, black-legged birds.

In Duckwings prizes are too often awarded to birds that show they are not pure-bred, such as hens with brown on the shoulders and wings, eyes not red, and coarse red breasts, all which defects generally go together, and should disqualify such birds for prizes, which should only be given to the pure-bred and beautiful bluish Silver-Grey hens, with the delicate pale silver-fawn breasts. Red-backed Duckwing cocks are also impure.

In the Piles, many judges persist in giving awards to the yellow-skinned, yellow and willow-legged Pile Game, instead of to the old white-skinned, white-legged, true-bred, hard and Game Piles, which are the real old fighting breed of the Piles, and the game birds.

The Black-breasted Reds seem to be the best judged birds at our exhibitions, as a general rule. I think far less fault seems to be found with the awards in this class than in any other at exhibitions, though the prize Partridge hens are often too pale in colour or not red enough, and their necks too pale also. Mr. Hindson, of Liverpool, and Mr. J. P. Smith, of Worcester, ought to be, and no doubt are, excellent judges of Game fowls, as are others of the Birmingham Judges, especially the old Game Judge, Mr. Thomas Chalton, who is said to be the best and most practical Judge of Game fowls in England, but many others are no doubt equally good. Game fowls, though numerous, were, perhaps, scarcely so good as usual at the last Birmingham Exhibition, as, if they had been, stags would not have won the cup, for when adult birds fail in getting cups, it is, I think, usually a sign that the show of birds is scarcely "up to the mark." I must say that I think it is wrong at exhibitions to let willow-legged red-combed Brown Reds supersede the old gipsy-combed, black-legged, true-bred strain, and also wrong that the old true-bred, white-legged Piles should be superseded by yellow-skinned, yellow and willow-legged Piles of inferior courage. I object to both yellow-skinned Brown Reds and Piles, as cross-bred, mongrel, and bastard breeds of their colours, and much prefer the original type of each of these two sorts of Game fowls. I also object to pens of single hens and pairs of hens, as useless, and to large, heavy Game fowls, with the narrow, falling, or drooping tails.—NEWMARKET.

POULTRY-KEEPING.

My *début* on this side of the channel. Hitherto the Journal has had charms for me only so far as the gardening portion of it is concerned, and the leaves of the latter part have remained uncut—not that I was quite an ignoramus on the subject of fowls or bees; but I never could see what fun it was to those little boys who will flatten their noses against the pastrycook's windows, while the tempting treasures within are as inaccessible to them as if they were the golden apples of the garden of the Hesperides; and so, as I could keep neither one nor the other, I have allowed this portion of the Journal to pass untouched. The case is now different. The scene of my future labours as a pastor will be a quiet country village, where bees and poultry will be amongst the possibilities, and I want to know what would be the most desirable and economical stand to go in for. I used, when I did keep poultry, to have Spanish, but although they were very beautiful, I could never see that they paid. Indeed, my good brother still adheres to them, and people laugh at him, saying the eggs cost him a guinea a-piece. I do not think they quite cost him that, but still I do not think them profitable; moreover, I always found that after a while the white face became discoloured, and the beauty of the birds became somewhat disfigured. What, then, is to be the sort? I incline to the Grey Pouter, but here, again, do not they become "gouty"? I never kept them, but fancy so. Cochinchinas I think an abomination, although here, doubtless, I am an ignoramus and a heretic, but we cannot help our tastes sometimes, and I do not see beauty in these great long-legged giants of the poultry-yard. I confess to having been struck with the article on barndoor fowls in a recent number of the Journal, as I can readily imagine that such a cross as there recommended would be a profitable sort, but then it is not "*pur sang*," and I rather incline to thoroughbreds whether in fowl or flowers, still, I think I should like to try them. Are not the Bolton Greys good layers? and supposing that I kept both sorts—that is, the barndoor fowls and the Bolton Greys, and had two hen houses, should I be likely to keep the breed distinct? and one other question I would ask, If I decide on com-

mencing with this stock, where shall I procure them most conveniently to my new abode, near Ashford, on the South-Eastern Railway?—D., Deal.

BUCKWHEAT AS POULTRY FOOD.

My experience of buckwheat as poultry food is exactly the same as "Nemo's." Since Christmas my fowls have had a mixture of buckwheat, Indian corn, and barley, and they always pick it up in the above order. My supply of eggs has been very good, which I attribute to the buckwheat. It is also by weight about the cheapest grain that can be obtained.—PHILIP CROWLEY, *Culverton House, Alton.*

DETERIORATION OF FANCY PIGEONS—ALMOND TUMBLERS.

POUTERS, all about Pouters, for many weeks there have been articles in "our Journal," but at last other varieties of Pigeons are mentioned.

Mr. Volekman says that most of the varieties of the "fancy" Pigeon have deteriorated in many of their qualities. Mr. G. Ure, in not a very courteous manner, bluntly denies this, and quotes the Glasgow and Birmingham Shows in proof. I have never seen the Glasgow Show, but I have the Birmingham from the commencement, and also many other large shows, and I must decidedly side with Mr. Volekman. Though the number of pens of Pigeons exhibited last year was in excess of former years (putting imported birds out of the question), in nearly every class I saw no advance, and in many cases they were not so good as I remember to have seen many years ago. True, some classes were strong in numbers, but in my opinion they were weak in quality. I believe this has arisen in most instances from many of the best birds having been bought up for some time past at high prices by persons totally deficient in the skill required in the breeding of Pigeons, and for the sole purpose of taking as many prizes as possible; and thus the birds have been worn out, and some have died of neglect or improper treatment. By these means several of the best strains of many of the varieties have been entirely lost. I am sorry to say that I know of several instances where such has been the case.

The Almond Tumbler is one of the breeds mentioned both by Mr. Ure and Mr. Volekman. I remember well the birds of Messrs. Hardy, Lucy, Pyne, and various other gentlemen; theirs were the true Almond Tumblers, having the true Almond ground, with the other colours finely intermixed, beautiful as a carnation in the marking. I remember the large full-made heads of the birds, with their eyes like pearls, and their gold-lined beaks. I remember at the private shows in London years ago, seeing many of these birds; they are not only fresh in my mind, but I find them so in the memory of others, and not at any of the great or small shows have I seen such of late. Most of the birds exhibited are wrong in the ground colour, being of a dull reddish tint instead of the rich yellow of former days; many of these birds also have not colour in their tails, &c. This is fatal to an Almond. I own there are still a few good ones about, and these few seem to go the round of the shows, and must afford gratifying results in the way of prizes to their owners. To me it seems that exhibitors forget that in the Almond class the birds must be pure Almonds in colour, and if not up to the standard they are only fit for the Tumblers of Any other colour class (if there be such); and the qualities of head, beak, eye, &c., will avail them nothing in the Almond class, as they are not Almonds, and it is for Almonds that the prize is given, and not Splashes, &c.; and also for a pair, not a dark cock and light hen, but the best matched pair. I mention this, as I seldom see an evenly-matched pair at any of the shows.

Now, if there are as good birds as ever, where are they? I do not see them at the large shows; but, perhaps, there may still be some in the hands of gentlemen who do not care to send such delicate and valuable birds from home; but when Mr. Ure says the large shows exhibit a decided advance in the Almonds and also other breeds generally, I beg most respectfully to differ from him. I say respectfully, because I do not wish to use my opinion in an offensive way; and though I differ from him, I wish to do so in as courteous a manner as possible, and I sincerely trust that all further controversy in the matter of Pigeons will be so carried on, though I can scarcely say that it is so at present.

If wished by any fancier that I should point out the breeds that I think are keeping their ground and those that I deem are losing it, I shall be happy to do so on some future occasion. —HARRY.

[Be assured that your comments will be acceptable to all Pigeon-fanciers.]

WOOLWICH, PLUMSTEAD, AND CHARLTON FANCY RABBIT SOCIETY.

THE half-yearly Exhibition was held on the 6th inst., at the Society's Club House, Beresford Street, Woolwich, when there were shown some of the finest specimens ever exhibited. One doe belonging to Mr. A. Carey, was worthy especial notice, its weight being 13 lbs. 9 ozs., and she had not attained her eighth month. She took three prizes. We must also notice another doe reared by Mr. A. Carey, which weighed 16 lbs. 9 ozs.

LIST OF PRIZE RABBITS.

Owners.	Colour.	Sex.	Length of ear.	Width of ear.	Weight.	Age.
					lbs. ozs.	m. d.
*Mr. A. Carey's	Tortoiseshell	Doe..	21½	5½	13 8	7 29
Mr. Vallom's	Tortoiseshell	Buck	20½	5½	9 4	7 29
Mr. Skinner's	Yellow & White	Doe..	20½	4½	9 8	6 29
Mr. Walklin's	Black & White	Doe..	19½	4½	10 1	7 14
Mr. Olley's	Black & White	Buck	19½	4½	6 4	3 29
Mr. Dawson's	Yellow & White	Doe..	18½	4½	7 1	4 21
Mr. Burrell's	Yellow & White	Doe..	18½	4½	8 2	5 11
Mr. Thompson's	Tortoiseshell	Doe..	18½	4½	9 12	8 0
Mr. G. Carey's	Blue and White	Doe..	19½	4½	8 5	6 13
Mr. A. Carey's	Grey and White	Buck	19½	4½	9 10	7 29
Mr. Kent's	Pawn	Doe..	20½	4½	8 13	7 29
Mr. Jas. Carey's	Blue and White	Doe..	Ex. weight..		16 9	

* This Rabbit took the weight prize under eight months, also the width prize, being the widest exhibited.

THE EGYPTIAN BEE.—PART VII.

HOW IT HAS FARED SINCE I TRANSMITTED IT TO AMERICA.

In page 39 of the twelfth volume of "our Journal," I related how I had been applied to by the Rev. L. L. Langstroth, who was desirous of introducing *Apis fasciata* into America. In consequence of this application I imported a second queen from Herr Vogel, placed her at the head of a hybrid stock of Italians, and despatched the entire colony to Liverpool, thence to cross the Atlantic, on the 21st of October, 1866. Of its safe arrival in the United States I was advised by Mr. Langstroth in due course, and early in 1867 that gentleman thus writes in "The American Bee Journal," under date of the 10th January in that year.

"I cannot close this communication without paying a deserved tribute to Mr. Woodbury, for the admirable manner in which he prepared a colony of bees with an Egyptian queen expressly imported by him for me from Vogel's apiary. Although the bees had been detained nearly a week in the Custom House at New York, I found on opening the hive at Brooklyn, that they had suffered little, if at all, from their long confinement, few more, if any, having died than would have perished had they remained on their stand in his apiary. The arrangements for giving the bees air were excellent, and the devices for preventing the combs from being broken were superior to any I have ever seen."

Having, therefore, received this colony intact, and obtained another Egyptian queen through the kind offices of the Rev. Mr. Kleine, of Luethorst, in Hanover, Messrs. L. L. Langstroth and Son, with business-like promptitude, immediately advertised under date of November, 1866, to the following effect:—

"Egyptian Queen Bees. Having received choice queens of this variety from the Berlin Society of Acclimatisation, which imports them from Egypt, we shall be prepared to fill orders for them next season. For circular and price list send," &c.

This advertisement seems, however, to have been at least premature, as may be inferred from the following communication addressed to the editor, which appeared in a recent number of the "Bee Journal."

"Many of our correspondents are calling our attention to the clause in our circular for 1867, in which, speaking of *Apis fasciata*, commonly termed the Egyptian bee, we say, 'We can speak warmly of their great beauty, and will give the public our judgment of their relative value, when we have subjected their claims to a thorough test in our climate.' It seems to

be expected that this report can now be made. Owing to a peculiar combination of circumstances such is not the case.

"We received in November, 1866, two distinct importations of these bees. Their coming had been delayed until we had given up all expectation of their arriving that season; and we had consequently no colonies prepared for the reception of the queens. They arrived late in November, and it was several days later when they reached our apiary. The weather was unusually unfavourable even for December; and some of the queens perished from exhaustion long before they could be introduced. Others were not to be found when the stocks to which they were introduced were subsequently examined. As our order for another supply of queens raised in 1866, and thoroughly tested, had already gone forward to the Berlin Society of Acclimatisation, the queens to be shipped in April, 1867, we still hoped to be able to breed and test this variety last season, though we returned all monies received by us on order for Egyptian queens. But we found it impossible, although having a personal agent in Europe, to expedite matters in the least. Herr Vogel, who breeds these bees for the Society, was absent in Egypt during part of the season, and we did not succeed in getting our importation of 1867 in time to breed from them to any extent last fall. We are, therefore, able to say little more about *Apis fasciata* from personal knowledge than we could have done a year ago. Those apiarists who are expecting a report from us in regard to the merits or demerits of this variety in any or all points, must consequently await the results of another season's operations.—L. L. LANGSTROTH AND SON."

Further particulars are given in a letter which I have just received from Mr. Langstroth, who, I regret to learn, has been for some time laid up from ill health, and who, speaking of the Egyptian queen which I sent him, says:—"After I reached home I found that beautiful queen gone, and have never been able to ascertain what could have happened to her, as she was in prime condition when I left New York, and her colony all right when examined here. I also lost all those imported directly from Vogel, which came in miserable condition. We had four queens last season from him; two died, and the other two were hybrids. We have now ordered others from a different party, determined to test this variety in America. Thus far we have not found them peculiarly irritable."

It does seem almost heart-rending that this queen, which appears to have been about the only one that reached America in good condition, and which, originally bred in Germany, had escaped the dangers of a journey, first to England, where she encountered the risk of being placed at the head of an alien colony, and then to America, only to perish miserably just as she had reached the end of her wanderings; but I think I can make a shrewd guess at the manner of her disappearance, and possibly afford a hint for Mr. Langstroth's guidance in his future dealings with such "kittle cattle" as Egyptian queens. Unlike the portly Italian monarchs, which are so little disturbed by a sudden transition from the Cimmerian darkness of the hive's interior to the full glare of the noonday sun and the curious gaze of the apiarian, that they will sometimes actually perform their duty of oviposition whilst the comb upon which they are standing is held suspended in the hands of the operator, Egyptian queens endeavour in every way to elude his scrutiny, and being generally too heavy to take wing, will often quit the combs altogether, and remain with a few stragglers in the empty hive. In Mr. Langstroth's case, however, the season was so far advanced that egg-laying must have been entirely suspended, and the queen being therefore slender, and in fine condition for flight, probably took wing without his perceiving it immediately upon being lifted out of the hive. Had he, when he first saw her at Brooklyn, adopted his usual precaution of clipping her wings, this catastrophe might in all probability have been averted.

It would appear, therefore, that the attempt to propagate the Egyptian bee in America having resulted in complete failure both in 1866 and 1867, Messrs. Langstroth are now exerting themselves to retrieve their misfortune. They have my best wishes for their success, but in the meantime the enterprise is being taken up by others, since we find in the Albany "Country Gentleman," that Mr. Ebrick Parmby, of New York, who has assisted Messrs. Langstroth in their importations, has received two nuclei on his own account, and, in conjunction with Mr. W. Cary, of Coleraine, Massachusetts, undertakes that "every exertion will be made to breed them in purity, which will be done in an apiary five miles from his (Mr. Cary's) Italian stock."

Mr. Langstroth furnished to the "Bee Journal" my first six articles on "The Egyptian Bee," which are copied and duly acknowledged as being taken from "our Journal," but the wind-up in which I describe the ferocity of my whilom *protégées*, and the satisfaction with which, after stiling the last colony, I trod in the earth over their grave, does not appear to be in accordance with the editor's ideas, for insertion is at once given to the letter from Mr. George Fox, who from some occult reason seems never to be stung by bees, and appears, therefore, to be able to manipulate even the savage Egyptians with impunity; whilst no notice whatever is taken of the evidence of Mr. Lowe, Mr. F. H. West, and Mr. S. Bevan Fox, all of whom so unquestionably confirm my testimony. Mr. Langstroth also contributes an article from his own pen, in which occurs the following passage:—"I shall venture the assertion that Mr. Woodbury's experience in the moist and cool climate of England, the exact opposite of that of Egypt, can hardly be accepted as a proof of the bad temper of the 'children of the Nile.' All Mr. Woodbury's stocks also, with one exception, had hybrid queens, and our experience with hybrid Italians has been such as to prepare us for almost any amount of ferocity from such mixtures. None of us who have handled even the pure Italians in such damp and cool days as usually prevail in England, can have failed to notice that they are far less peaceable than when operated on in our hottest weather."

In conclusion, I may say that whilst all and sundry of our transatlantic friends have my best wishes for their success in increasing and multiplying their African *protégées*, I would yet venture a word of warning to any of them who may be inclined, even on a broiling day, to operate on a strong stock of Egyptian bees in the unprotected fashion delineated in plate xxiii. of Mr. Langstroth's book.—A DEVONSHIRE BEE-KEEPER.

ABYSSINIAN BEES.

I HAVE noticed in nearly all the letters from the newspaper correspondents in Abyssinia, that a quantity of honey is brought into the camp. I should be glad to know if this is produced by the Egyptian or any other distinct species of bee.

Having a friend on Sir R. Napier's staff, I would endeavour to have some of these bees sent home, if the "DEVONSHIRE BEE-KEEPER" or any of your readers having experience in the transport of bees, would kindly give me such particulars as would enable my friend to have them properly packed, and sent off with a reasonable hope of success.

It should be understood that the gentleman to whom I refer has had little or no experience in bee-keeping, and that it will be necessary to enter into detailed instructions from the beginning.—J. M. H.

[It is not known with certainty what species or varieties of the honey bee are indigenous in Abyssinia, nor is it possible to give detailed instructions which will enable your friend to pack bees for transport to such a distance without knowing something of the kind of hive in which they are domiciled. I would suggest, therefore, that you should first endeavour to procure a few specimens by which the species may be identified, and if possible a bit of empty comb, as well as ascertain if bees are domesticated, and if so, what description of hives are used, together with any particulars that may be obtainable of the mode of bee-keeping practised in that remote region. My best services will then be at your disposal; and if you will first communicate with me direct, I shall be happy to furnish you with a little contrivance by which specimens of bees may be sent uninjured by post to any distance.—T. W. WOODBURY, Mount Radford, Ereter.]

SILKWORM-REARING IN ENGLAND.—No. 8.

THE most suitable apartments for silkworms are those facing the south, on upper, not ground floors, free from damp, not subject to impure exhalations or sudden changes of temperature, but open to the pure air. It is customary among large silkworm-rearers to have a small room in which to hatch silkworms' eggs, transferring the worms after their second or third sleep to more spacious rooms. A small room in spring is easier to heat with less consumption of fuel. It should be lighted by a window facing the south, opposite which should be the door, entered from another room, and it should have a stove at one end, at the other a fireplace, or, better, a low hearth of the olden times. The window must be provided

with a blind to protect the worms or eggs from the sun. The centre is to be occupied by a small silkworms' castle if the worms are to be kept in the room any length of time, otherwise a stage or even a table will be sufficient for the hatching. Such a room 10 feet square would be sufficient to rear worms in from a third of an ounce of eggs, or about 15,000 in number. Several ounces will require more room in proportion; therefore, the erection of a suitable building if not already at command must have the attention of the rearer.

The best position would be the south side of a hill, at a distance from low marshy districts, and open to a healthy air; land with a dry subsoil of a porous nature is to be preferred. The building should, if possible, face the south, the entire length running east and west. I should begin by forming a cellar a third of its size, in which to keep mulberry leaves fresh and ready for use. Over the cellar, a foot above the ground, might be a room 8 feet high, having wide doors at least on two sides, to admit a current of air in which to lay out the leaves to dry, if gathered wet, as sometimes is unavoidably the case. This room would serve as a reeling place, and for a variety of purposes when not otherwise required. Above this the rearing room is to be built; and if for only two castles, adapted for rearing worms from 1 oz. of eggs, its dimensions must be at least 20 feet by 20, and 10½ feet high. For six castles the same width of 20 feet is appropriate, but the length may be less in proportion, because the castles placed three in a row, end to end, occupy only 36 feet, and reckoning 7 feet of space to spare round them at the two extremities, or 14 feet more, the entire length would be 50 feet. The first-named room will require only one stove, at the east end, and a fireplace, or a low hearth is better, at the west. There should be a door 4 feet wide in the south front, and a sash window 7 feet high by 3½ feet wide on each side. On the north one such window will suffice, but that one is necessary, not only to admit light, but at times for increasing ventilation. The larger room must have a stove at the east and west ends, one central fireplace or hearth on the north side, and one door in the south side, with a small window above it, and two windows on each side. On the north two windows, or one opposite each end castle will suffice. All the windows must be provided with shutters and blinds, also with ventilators on the south side in their bottom central panes, and on the north in the top ones, constructed all to close more or less when required.

Whatever description of stove be adopted, smoke must not escape from it into the room. The cheapest and best materials of which to construct it would be firebricks, which retain the heat better than anything even when the fire is out. Its height might be 3 feet, and the length of each side 27 inches. At the present day there are many good appliances for warming buildings. The hot air, water, or steam systems with a furnace outside would be excellent, but, perhaps, not advantageous unless for a larger room than I have named.

Some large rearers hatch silkworms' eggs by means of an apparatus placed on a table, and warmed with steam pipes from a small boiler heated by an argand fountain lamp. I fully appreciate the method as most advantageous, because this instrument is easily managed and regulated. It is a case or closet of wood, which may be a yard across each way, and 4 feet high, the front consisting of two glazed doors, one at the top the other at the bottom. Inside, within 15 inches of the upper part, is fixed a wire shelf; another may be 9 inches below it. These are for the boxes containing eggs to be hatched. The boiler, which is of tin and no larger than a common kettle, is fixed outside the case to a bar of iron connected with the case, and the lamp is secured beneath it. From the top of the boiler a half-inch or 1-inch pipe is carried through the bottom of the case and round the sides, up the back, out at the top, and down outside, again entering the boiler about one-third from the bottom. There should be at the top and bottom of the case trap doors, to be kept open a few inches for ventilation, more especially when the worms are issuing from the eggs. It is only necessary to visit this apparatus two or three times during the day and night to snuff the lamp or fill up the boiler with hot water if there is fear of reducing the temperature too much by using cold water. A thermometer is necessary inside the case in order to regulate the heat. With this apparatus in the hatching room, fire or stove heat will hardly be required unless the weather is cold, which is sometimes the case even in May.

Another simple method of proceeding is to place the hatching box containing the eggs in a common horsehair or wire sieve, set the sieve on the two front legs of a common chair

lying on its back upon a table, and place underneath the sieve a low oil or spirit lamp, the flame of which can be turned up or down without danger of going out, as more or less heat is required. Six inches above the lamp should be fixed a sheet of tin or iron a foot square to distribute the heat and prevent the flame concentrating itself too much under the centre of the sieve and so endangering the eggs. The sieve can be covered with a towel or piece of blanket upon which a thermometer may be set.

Some people place the eggs in small linen bags, putting them at the foot or head of a bed under the sheets and blankets where a person sleeps. This method I do not consider very good, any more than that practised by women on the continent of placing the eggs in their bosoms, where the heat is too great. Besides, I believe the exhalations from the body prejudicial to the worms, causing them to enter life in a weak state.—LEONARD HARMAN, JUN.

OUR LETTER BOX.

LADY DORKING'S TROUBLES.—Having half promised to find a "Children's Corner" for the following, we redeem our semi-promise.

"Cluck, cluck," said Lady Dorking,
One sunny April day;
"I feel so very broody
I cannot longer lay.
"They've taken all my eggs away,
And left me only one,
And that I'm sure will never hatch,
Because it's made of stone.
"Oh dear! I feel so broody
I don't know what to do;
Oh! what I'd give to have some eggs,
If only one or two!"
The Baron Dorking heard the noise,
And quickly came to see,
What all the clucking was, and who
It possibly could be.
And when he saw my Lady D,
He nimbly sidled up;
With head bent down, and drooping wing,
And many a tender cluck.
My lord's polite attentions, though,
Were not so well received,
My lady on the contrary,
Seemed very much aggrieved.
And turning round her swelling tail,
She raised her ruffled wings,
And said, with many an angry cluck,
Some very naughty things.
My lady thought, on being left
To sorrow all alone,
She'd go and try what she could do
To hatch her egg of stone.
So, turning round, she slowly went
Towards her straw nest,
And settled down, with many a cluck,
Upon her fevered breast.
And drawing in her egg, she gave
Herself to incubation;
And found content, in having found
Her proper occupation.
Next morning when Miss Annie came
To feed her pets, she saw,
On looking round, my Lady D
Was snugly "in the straw."
"You dear old thing!" she gaily cried,
"What are you doing there?"
Come out and have your breakfast—Why,
You're broody I declare!
"Oh fie! you naughty, naughty bird;"
Miss Annie gently said,
"To try and bite your Missie's hand,
From which you've often fed."
"But come, I think I have some eggs—
And you shall have a brood,
I'll take away your egg of stone—
But mind, you must be good."
She found a nice secluded spot
And made her up a nest;
For three weeks' absence from her lord,
She thought would suit her best.
And so my lady had her wish,
And this displays the beauty
Of trying, be it great or small,
To do our present duty.
"Tis true that like the egg of stone,
That duty may be humble;
But do it, and you'll find more joy
Than standing still to grumble.
On duty's path you'll find your wish,
For 'tis enchanted ground
Where bitters all are turned to sweets,
And toil with rest is crowned.

—B.

EGGS NOT HATCHING (*Constant Subscriber*).—The failure of eggs is a Cuckoo cry; everyone complains of it. An unimpregnated egg is clear, and will remain so although under a hen for two months. One that becomes rotten without being stale is one that has lived and died and become putrid. A stale egg is a different thing; that is the result of being kept too long. It becomes stale as meat does. Change the cock. (*T. J. K.*).—The complaint we receive from everyone now we receive every year. Of the early eggs that are laid, it is true many are clear—i.e., they are not impregnated. In the cold weather a cock confines himself to his favourites. Many of the eggs about which we have complaints now, were laid last month. Some nights there were from 8° to 10° of frost. That would spoil any egg; less than that would chill one, and that has the same consequence. Then broody hens have been very scarce. Many were put on eggs before they sat steadily and closely. They will sit well for two days, then they play with the eggs for two days, and then sit closely. Those eggs cannot hatch. When the pullets were running with the young cock it was too early; he did not notice them. Your eggs would be good from two days after the old bird was with the hens, provided he took to them. You need not be discouraged; persevere, and May will make amends for the disappointment of March.

SEPARATING COCHIN-CHINA COCKERELS AND PULLETS (*Lemon Buff*).—It is too early yet to separate chickens. It need not be done till there are indications that the cockerels will soon notice the pullets. White are as easily reared as any others.

HARE RABBITS (*Ocean Monarch*).—They are not crossed with the Hare; they would be Leporidae if they were. They derive their name from being in every way more like a Hare than a Rabbit. They weigh when full grown from 7 to 10 lbs. They are prick-eared, they do not burrow, and they are very prolific.

CRÈVE-CŒUR COCK'S SICKLE FEATHERS BROKEN (*Young Exhibitor*).—It is simply a disadvantage, not a disqualification.

SPANISH PULLET LAYING SOFT EGGS (*E. L.*).—There is no injury to the ovary, nor is the case likely to be a permanent one. It is simply a question of defective secretions. The proper treatment will be to confine her for a time, and to purge freely with castor oil till proper-shelled eggs are laid by her.

BREEDING POULTRY FOR EXHIBITION AND PROFIT (*W. B.*).—You begin with too many breeds. Four will be enough—Dorking, Spanish, Brahma Pootras, and Cochin Chinas. Give your Dorkings half the space, divide the remaining half among the other three. If you are bent on more breeds keep Crève-Cœurs and Game. You should not on an acre keep more than four breeds. Sixty fowls are enough for one acre, but with care you may keep seventy. The two acres will be wanted for the chickens. They will damage the crop one-third, or nearly half. We do not know the value of their guano. If you mean to sell chickens you will find it most profitable to sell as fast as they are fit for market, a few at a time.

GOOSE NOT LAYING (*J. Smeed*).—We cannot tell you why. It is unusual and almost impossible for a Goose to pass a season without laying. Watch her closely. It is more than probable the hen exceeds her time, because the eggs are too dry. We have had a dry time lately. If you have not done so, we advise you to moisten the eggs every day after the 15th. We think then you will not only find them come out, but they will be stronger.

INCUBATOR TEMPERATURE (*C. M.*).—Temperature for hatching, 105°. Any thermometer correctly graduated will do. The temperature may be allowed to fall 5, or even 10, for a short time, just as it does when a hen leaves her nest to feed. But this cooling must not be at the time the chickens are breaking the shell.

DUCKS RETURNED (*E. Clarke*).—You were treated most unfairly, but there are too many difficulties in the way for you to recover compensation.

HIVES (*W. E.*).—It is impossible to consider all things, so as to give a satisfactory answer to the question, "which is the best form of hive, all things considered?" without knowing something respecting the apian attainments of the querist. The best hive for an ordinary bee-keeper is a good sized one, of the common sort. The best for a bee-keeper who wishes to make a step in advance, and put on an occasional super, is a straw hive with a flat top (such as Payne's and others), and orifices which will permit him to do so, and to feed when necessary by means of an inverted bottle; whilst the best for the scientific apian is the Woodbury frame hive.

BEES DYING—FEEDING (*J. Riall*).—Your first stock evidently perished of starvation, and being only a swarm of last year, there is nothing very unusual in the absence of royal cells. The two others appear to have died of dysentery, which may possibly have arisen from the unwholesome nature of the food (ale and moist sugar), with which they had been supplied. The restless stock might possibly have lost its queen, and you may have saved it by giving the bees another; but all this is very uncertain. "Burnt" sugar is a most provoking printer's blunder, which occurred in our answer to your inquiry of the 5th of February, but which we did not discover until directed to it by your letter. It should have been "lump" sugar, which, when mixed with water in the proportions indicated, forms excellent bee food. The best mode of administering it is fully described in the bee calendar of "The Gardener's Almanack" for the present year. Frame hives enable the apian at any time to obtain a clear insight into the actual condition of his stocks, and are, therefore, by far the best if you can only manage to manipulate them. Your note, received since the foregoing was written, and in which you state that the added queen has been expelled, whilst the extrusion of a few undeveloped bees has proved the existence of the original queen, is sufficient evidence of the uncertainty alluded to.

POULTRY MARKET.—APRIL 15.

We have still a short supply, with a dull trade. If the demand were greater poultry would be unusually dear.

	s	d.	s	d.		s	d.	s	d.
Large Fowls.....	5	0	5	6	Pheasants	0	0	0	0
Smaller do.	4	6	5	0	Partridges	0	0	0	0
Chickens	3	6	4	0	Guinea Fowls	3	6	4	0
Geese	8	0	9	0	Hares	0	0	0	0
Duckings	5	0	5	6	Rabbits	1	4	1	5
Pigeons	0	9	0	10	Wild do.	0	8	0	9

WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 23—29, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
23	TH	Royal Hort. Society of Ireland, Spring	59.0	36.4	47.7	20	49 4	8 47	34 45	52 47	1	1 50	114
24	F	Meet. of Royal & Zoological Soces. [Show.	58.7	35.6	47.1	15	47 4	10 7	7 6	6 9	2	2 1	115
25	S	Royal Horticultural Society, Promenade.	59.9	36.9	48.4	16	45 4	11 7	42 6	15 10	3	2 16	116
26	SUN	2 SUNDAY AFTER EASTER.	60.5	36.1	48.3	17	43 4	13 7	27 7	19 11	4	2 21	117
27	M	Meeting of Royal Geographical Society.	59.2	36.0	47.6	17	41 4	14 7	21 8	morn.	5	2 31	118
28	TU	Meeting of Institute of Civil Engineers.	60.8	35.7	48.2	17	39 4	16 7	22 9	16 0	6	2 40	119
29	W	Meeting of Royal Agricultural Society, [and Society of Arts.]	60.4	37.3	48.9	14	37 4	18 7	31 10	5 1	7	2 49	120

From observations taken near London during the last forty-one years, the average day temperature of the week is 59.8; and its night temperature 36.8°. The greatest heat was 82°, on the 27th, 1865; and the lowest cold 18°, on the 24th, 1851; and 29th, 1861. The greatest fall of rain was 1.40 inch.

FRUIT TREES ON OPEN WALLS AT THE NOTE, MAIDSTONE, THE SEAT OF THE EARL OF ROMNEY.



UCH has been said and written as to the respective merits of orchard houses, heated walls, glass casings, and last, though not least, open walls, with regard to the cultivation and successful development of many of our exotic fruits, and as any notes of successful culture combined with economy must ever be acceptable to the public, a few remarks on the wall fruit trees at the above-named place may not be unwelcome.

The kitchen garden, which is a parallelogram, running from east to west, and gently sloping to the south, is nearly 7 acres in extent, 3½ acres of which are enclosed by a wall 12 feet high, well clothed with a fine collection of fruit trees, consisting of choice kinds of Peaches, Nectarines, Apricots, Plums, Pears, and Cherries, all of which are placed with a due regard to giving each kind its most suitable aspect.

The Plums and Cherries are trained both in the fan shape and also horizontally. Fine examples of both methods of training may be seen, more especially amongst the Plums, of which there is a choice collection, not only of sorts but of specimens, some of them extending nearly 40 feet in width.

The Pears, with but few exceptions, are trained horizontally. Amongst them may be named a fine example of Gansel's Bergamot, covering 47 feet of this 12-foot wall with its beautiful tapering arms—beautiful at all seasons of the year—in the spring with its mass of blossom, in the summer and autumn with its almost invariably fine crop of fruit, and in the winter as an example of a close approach to perfection both in pruning and training. Taken as a whole this tree may be quoted as a model of what a horizontally-trained tree should be.

But it is concerning the Peaches and Nectarines that I would speak more particularly, and this brings to mind the question of orchard houses *versus* open walls; and knowing, as I well do, what splendid examples of both Peaches and Nectarines are annually produced by the trees on these walls, I cannot help feeling a doubt as to the necessity for orchard houses, at least in our southern counties. Doubtless in all the northern counties, and probably in some of the midland counties, and also in Scotland, orchard houses are a great boon to the gardener; but, generally speaking, in gardens enjoying the more genial climate of the south, and given the proper soil, good walls, healthy trees, and the requisite skill for their cultivation, I venture to affirm orchard houses may be considered an expensive luxury. They may be a very enjoyable promenade in all weathers, and they may present the fruit more agreeably to the view in all its stages of growth, but so far as the supply of Peaches and Nectarines is concerned, I think they are not to be considered as indispensable adjuncts to the garden. And surely it must be more pleasing and satisfactory for the gardener to produce, and his employer to have a supply of these

delicious fruits for the dessert without incurring the expense of a costly glass structure. Let us be honest about this. We all, doubtless, desire to have as much assistance from glass houses as possible, but if A can produce a supply of fruit in the open air, for which B, possessing equal advantages of climate, &c., requires glass, the only inference which can be drawn must be that B is simply deficient in cultural skill, or, possessing it, fails to apply it properly.

To return, however, to the trees in question. I may here mention that the whole of the Peach, Nectarine, and Apricot walls have a projecting board, level with the top of the wall, supported by and screwed on to stout iron brackets, which, passing over the top of the wall, are fastened by stout staples to the back of the wall. These boards, which are never removed, are 15 inches wide by 1½ inch thick, and it is calculated that they are put on the wall, painted, and finished complete, at a cost of 1s. per foot run.

As the treatment of one tree will suffice for the whole, I will proceed to notice what might be described as the monarch of the whole collection. This splendid tree is a Royal Kensington Peach,* and is about thirty years old. Its history is as follows:—

In the year 1845 these gardens were remodelled, and this tree, which had been planted about three years, and had made a vigorous growth, was, with many others, taken up, and its branches cut off; it was planted in the open garden, where it remained, having but very little notice taken of it, till the autumn of 1847, by which time the new walls were built, and the borders in readiness for the trees, most of which were maiden trees. As this tree, however, appeared healthy, its present position was assigned to it, and it now covers 456 square feet of wall, being 38 feet wide by 12 feet high. It has eight principal or leading branches, and is in a most vigorous state of health, having an abundance of fine bearing wood from bottom to top. I may also state that the crop of fruit taken in the years 1866 and 1867 together, gives a total of ninety dozen of fine fruit; and this year, as the fruit has set so abundantly and the tree is so vigorous, it is intended to allow it to carry fifty dozen: so that up to the present time each year has witnessed an increase of its vigour and fruitfulness.

The treatment to which this tree has been subjected presents nothing original or uncommon. The branches are all unnailed in the autumn, with the exception of enough shreds being left to keep them from being broken by the wind; this is done as soon as the leaves have fallen, which process is sometimes assisted by lightly passing a broom over them as soon as signs of decay are visible: the tree is then carefully dressed with a strong mixture of soft soap and sulphur, and it is pruned and nailed early in February. Till within the last three or four years the Nottingham netting was used to protect the blossoms and foliage from frost; this, however, has been entirely discontinued, as the projecting board is found to afford all the shelter that is required, and the netting is not now used

* I give the name by which the tree has always been called, although it may be a synonyme of *Grosse Mignonne*.

till it is required to protect the ripe fruit from wasps, &c. The foliage is closely watched, and is at once freed from any noxious blight or insect by which it may be assailed. To this careful attention to the health of the foliage, together with a vigorous root action, may be attributed in a great measure the robust health and noble proportions of the tree.

The soil of the garden is a heavy loam of an average depth of 3 feet, resting on a subsoil, or rather a substratum, of shattery rock.

Although the borders are not of uniform width, neither are they all treated alike, some being cropped heavily, and, I may also add, manured heavily, yet it may prove interesting if I give the dimensions and treatment of the border in which the tree referred to is planted. The border is 8 feet wide, it is well manured every autumn with good rotten two-year-old dung, and is slightly forked over; in fact, this operation may be rightly termed a shallow surface-dressing, as the soil is only stirred sufficiently to cover the manure, with which a little charcoal is occasionally introduced. Liquid manure is also freely administered as the fruit is swelling. Some winter Lettuces are usually planted close to the wall, and occasionally a few flowers may be seen on the front part of the border, but nothing approaching to a crop is ever attempted. The border is the reverse of porous, being stirred as little as possible, and also having a narrow pathway at about 18 inches from the wall, which is trodden hard, and is never dug up. In front of the border, and running parallel with it, is a coal-ash walk 6 feet wide, and into the firm loamy soil under this walk the roots of the fruit trees have, doubtless, penetrated.

After having written the foregoing remarks I need hardly say that I fully endorse the views advanced by Mr. Nicholls in page 271, and I will only add, that could "OBSERVER" but see these trees, it would materially alter his views as to any debility of constitution arising from that exposure to our changeable climate which trees may be said to undergo that have no other protection than an open wall and a simple coping board.—*EDWARD LUCKHURST, Egerton House Gardens, Kent.*

HOTHOUSE BOILERS.

THE discussions which have lately appeared in the horticultural papers on the subject of boilers is a proof that opinion is much divided as to the merits of those in use, and also, I think, that there is much dissatisfaction with the working of many of them. I have for years contended that no one boiler yet offered for sale as a good one, is anything like as good as it might be.

A perfect boiler ought to burn any kind of fuel—coal, slack, or cinders. It ought to have wide-enough side flues to cause a good draught, even if the chimney be 100 feet or more from the fire. It ought to sit down to the firebars, so as to require no bricks under it. The return pipes ought to enter the boiler without passing through brickwork. Is it necessary to prove these propositions? The difference of from 7s. to 10s. a-ton in fuel is surely a great consideration. I find it so with thirteen houses heated with hot water, some of them 100 feet long. Using nothing but cobbles and slack the cost is considerable, but it would be more than doubled if coal were used. A boiler with narrow side flues will burn well if the chimney be close to the fire, but what a waste of heat there is in such a case! Why should not the flue run the length of the house? If the draught is good and no damper is used there is no danger. No wonder flues are dreaded if dampers are employed; to imprison explosive gases in a flue is to invite an accident. There are two flues here 100 feet long, and one nearly 200 feet; it is wonderful what economisers of heat they are.

That a boiler ought to enclose a fire is self-evident; when set on bricks, heat is wasted and bricks burnt away; this is more particularly the case where the flame impinges on bricks in place of striking part of the boiler. If the return pipes pass through a mass of hot bricks return currents are set up, and the flow of water into the boiler is much impeded.

Now, what boiler fulfils all these conditions? The tubular boilers so often crack, that if no other objection could be raised against them, I should decline to use them; but they require coke—an expensive fuel, are surrounded by bricks through which the return pipes must pass, and necessitate a very deep stokehole, which in wet situations entails a great expense in drainage, or, if not drained, it must be so constructed and covered as to keep out water. The saddle boiler presents a good concave surface to the action of the fire in the first in-

stance, and its sides come well down to the firebars; it will also burn any kind of fuel, but the flame wastes its power on a mass of brickwork, through which the return pipes are obliged to pass, and the side flues add little to its efficiency. To obtain as much heat from the side flues as possible, they are constructed very narrow to make the flame lap the boiler, as the bricklayers say; thus, unless the chimney is close to the fire there is a deficiency of draught.

McNab's presents a surface of iron, backed by water, to the action of the flame, and the pipes go direct into the boiler without passing through bricks—two great advantages, but it requires several courses of bricks on each side, and is too far from the bars.

The X boiler, made at Dalkeith, is, in my opinion, the best boiler out; the under surface is nearly as good as the dome of the saddle, and the side flues present a good surface above the flame, whilst from their size they will admit air enough for a long flue; in other respects it is as faulty as others, as it must be surrounded and raised on brickwork. I have for years urged Mr. Foster, who builds my houses, to bring out a boiler of his own invention, which is intended to remedy all these defects; but he has preferred to improve the X boiler, as being the least trouble to himself. In this I do not think he has consulted his own interests, but he has made the X boiler as nearly perfect as possible. Two castings containing water, and of course connected with the boiler, come down to the firebars, and a box of water is also provided for the flames to play upon, and into which the pipes bring the return water direct, at a lower level than the boiler; the fire is thus surrounded entirely by water, and no bricks are exposed to its action. This improved boiler is now at work in my new Orange house, 100 feet by 30, containing about 1300 feet of 4-inch pipes, and I could almost cook a chop on them. I am satisfied it is twice as powerful as any boiler I have, whilst it burns much less fuel in proportion to its work. I should be happy to show it to any one interested.—*J. R. PEARSON, Chilwell.*

PLANTS INHALING NOXIOUS GASES.

WHILE I fully appreciate the able comment of the Editors on my article, in page 276, there is a portion of it on which I cannot remain totally silent, inasmuch as it gives the direct negative to the very foundation of my argument—viz., that suffocation is in reality poisoning. The words which I take exception to are these, "He assumed and still assumes that suffocation is the same as poisoning. If so, the man who is hung is poisoned! Now, unquestionably this similarity is not admitted." In reply I will merely give two extracts, which will certainly show that the similarity is admitted in language most unequivocal. Gregory, in his "Practice of Medicine," says—"Death by pure asphyxia is attributable to venous blood acting as a poison. The sort of death described as beginning at the lungs takes place not only in hanging and drowning, but by cutting the spinal cord in the upper part of the neck, whereby the muscles of respiration are paralysed." The date of the work from which this extract is taken, is 1846. It was then in the sixth edition. The next extract is from "Taylor's Medical Jurisprudence." It is dated 1861, and up to that time there had been issued from the press 15,750 copies. On page 797 it thus reads—"In following common language, the medical jurist is compelled to apply the term suffocation to another variety of death—viz., that of poisoning by gases. Thus, if a person die from the effect of carbonic acid, of confined air, of sulphuretted hydrogen, or other noxious gases, he is commonly said to die suffocated. Strictly speaking he dies poisoned, as much so as if he had taken oxalic or hydrocyanic acid."

Under death by hanging in the same work asphyxia is given as the cause of death. I conclude, then, that asphyxia is suffocation, and suffocation is poisoning, and, consequently, the man who is hung is in reality poisoned.—*J. W.*

[We admit as fully correct the extracts which our correspondent has made, and as fully admit that some of the effects caused by suffocation are the same in certain instances as those produced by some poisons; but that is different from the dictum that suffocation and poisoning are identical.—*Eps.*]

THE NATIONAL TULIP SOCIETY.—The next Exhibition of this Society will be held at the Manchester Botanical Gardens on May 29th, in conjunction with the Great National Horticul-

tural Exhibition; and although the day is somewhat late for the south, the Show promises to be a great success. Admirers of the Tulip will be well satisfied by a visit to it, for the culture of this flower is carried out with spirit in this neighbourhood. We remind intending subscribers that no exhibitors' entries can be received after April 25th.

ROYAL HORTICULTURAL SOCIETY.

SECOND SPRING SHOW.—April 18th.—It has been frequently urged that horticultural exhibitions of late years have been too much alike, that the same subjects were brought forward show after show and year after year by the same exhibitors, and that nearly the only variety imported into them was that which resulted from certain kinds of plants going out of season and being replaced by others equally limited in number. There was much truth in this charge, and doubtless the decline of public interest in the horticultural exhibitions near London, which at one time threatened their existence, was in some measure attributable to the absence of new features and the little variety which they presented. Even the most ardent lover of plants became weary of seeing time after time the same stove and greenhouse plants, magnificent though the specimens were, the same Heaths, the Azaleas and Pelargoniums the same all but in kind; the interest flagged; the attendance of visitors fell off; the funds were diminished instead of augmented by the exhibitions; less and less became the amount of the prizes and the number of subjects for which they were offered, greater and greater became the sameness of the shows. The establishment of spring shows and Tuesday meetings has effected a great change, for they bring before the public a class of plants which previously, except in private gardens, they had little opportunity of seeing, the exhibition season has been prolonged by several months, and the cultivation of many plants, especially those which flower in the early months of the year, greatly encouraged. Thus at the Show on Saturday last there were beautiful collections of Anemones, the cultivation of which seems of late years to have languished in the south, being confined to only a few; but who could say, on seeing them as shown by Mr. Turner and Mr. James, that they are not well deserving of more attention than they receive? That they will—that they must—again come into favour we firmly believe. There were those old favourites the Polyanthus—charming flowers, which every one has it in his power to grow, but not every one can grow well; there were Cyclamens of surpassing beauty; and there were numbers of those plants which our grandfathers delighted in, but which have been driven out of cultivation by the more showy but less enduring bedding plants, and nearly lost—perhaps some of them quite so. Besides these, there were the Roses, the great feature of the Show, but they will always hold their own—they can never go out of fashion; a host of miscellaneous subjects; and Messrs. Lane's exhibition of spring-flowering plants re-arranged, and with its beauty enhanced by the introduction of fresh materials. All these combined to render the second spring Show at Kensington one of the most varied and excellent displays which it has been our pleasure to witness at this season. No wonder, then, that the expressions of gratification were general, and that the attendance of visitors was much more numerous than could have been expected from a cold niggardly forenoon, threatening to terminate in rain.

Roses, as already stated, were the great feature of the Show; superb specimens the most of them were, some having as many as thirty blooms, exhibiting as much perfection as if it had been the height of summer, and more of freshness. In the class for nine the competition was very close, the three collections shown being of great excellence. Mr. W. Paul took the first prize with Madame V. Verdier, splendid cherry colour; Elizabeth Vigneron, with more than a score of pink flowers, some of which were 5 inches in diameter; Beauty of Waltham, very fresh and bright; Jean Gonjon, beautiful red; Caroline de Sansal; Victor Verdier, with about a score of blooms and expanding buds; Louise Odier, rose, very full of bloom; Madame Damazin, salmon; and Céline Forestier, very fine. Messrs. Paul & Son were second, pressing very closely for first, with François Lacharme, very fine colour; Anna Alexieff; Professor Koch; John Hopper, very fine; Charles Lawson, with about three dozen blooms; Madame Villermoz; Souvenir d'un Ami; Madame de St. Joseph, with a score of blooms; and of Céline Forestier a very fine specimen. Mr. Turner, of Slough, was third with a very excellent collection, in which Victor Verdier, Maréchal Niel, Céline Forestier, and Madame Falcot, were very remarkable for the number of the blooms; the others being Leopold Hansburg, purplish crimson, Charles Lawson, John Hopper, Anna Alexieff, and Madame V. Verdier, all of which were also very fine.

In the amateurs' class the best six came from Mr. James, gardener to W. F. Watson, Esq., Isleworth, and the second prize went to Mr. Wilkie, Oak Lodge, Kensington.

For the best single specimen Messrs. Paul & Son took the first prize with President, and Mr. W. Paul was second with Comtesse de Brossard, with very large straw-coloured flowers. Mr. Turner had Madame Bravy, with upwards of twenty blooms and partially-expanded buds, but not in such perfection as he usually exhibits this beautiful Tea Rose.

In the class for twelve new Roses, first put in commerce in 1866

and 1867, there was again a keen competition. The first prize was awarded to Mr. W. Paul for Mademoiselle Annie Wood, with large and finely-shaped red flowers, bearing considerable resemblance to those of *Senateur Vaise*, and having very vigorous foliage; *Souvenir de Monsieur Boll*, very large, bright rosy crimson, free-blooming; *Madame Rival*, very double, pink; *Madame la Baronne de Rothschild*, very large and fine, peach; *Aspasie*, rosy crimson, shading off to peach; *Antoine Ducher*, very large, violet shaded crimson; *Charles Verdier*, rose; *Engène Scribe*, large, brilliant red, a flat Rose; *Gloire de Montplaisir* not in good condition; *Madeleine Nonin*, rose, not expanded; *Tea Madame Margottin*, pale yellow, very fine; and *Monsieur Furtado*, lemon, shading off to a paler colour, and altogether a finer Rose than *Céline Forestier*. Equal second prizes were awarded to Messrs. Lane & Son and Messrs. Paul & Son. The former had *Mlle. Annie Wood*, fine; *Madame Rival*, rosy peach; *Charles Verdier*, pale rose, with a salmon rose centre, fine; *Madame Margottin*; *Antoine Ducher*; *Madeleine Nonin*, rose, suffused with purplish lilac; *François Treyve*, crimson scarlet; *Horace Vernet*, velvety dark crimson; *Paul Verdier*, very fine, bright rosy crimson; *Thorin*, bright rose; *Madame George Paul*, dark crimson, shaded with violet purple; and *Tea Bonton d'Or*, small, lemon-coloured. Messrs. Paul & Son had *Madame George Paul*; *François Treyve*, fine; *Antoine Ducher*, *Horace Vernet*, *Paul Verdier*, *Charles Verdier*, fine; *Madame Margottin*; *Monsieur Noman*, pale peach; *Princess Mary of Cambridge*, *Monsieur Furtado*, *Napoleon III.*, violet-shaded crimson, and *Triomphe de Soissons*, delicate rose. Mr. Turner, of Slough, also exhibited a fine collection.

In the miscellaneous class an extra prize was awarded to Messrs. Paul & Son, for Roses in pots, among which were fine specimens of *Madame Villermoz* and *Gloire de Dijon* with splendid blooms; and Mr. William Paul had also extra prizes for a collection, and for ten boxes of beautiful cut blooms. Among these were several of the new Roses; for example, *Souvenir de Monsieur Boll*, *Mademoiselle Thérèse Levet*, pretty, pink, and *Madame Bellenden Kerr* in the bud state, white, with a blush centre, in the style of the Maiden's Blush. There were also fine blooms of *Enfant de Lyon*, pale yellow; *Lamarque*; *Princess of Wales*, crimson, with a fine glow of purple; *Safrano*; *Dr. André*, splendid; *Triomphe de Gnillet* lilac, of a coppery or salmon tinge, and deliciously scented; and, lastly, remarkably fine blooms of *Cloth of Gold* and *Gloire de Dijon*, produced by plants pruned on the spur system, like Vines, and which, judging from the results which Mr. W. Paul has already obtained, is likely to prove a decided success.

Cinerarias came next in order in the schedule, and of these the best were those from Mr. James, of Isleworth, who had neat well-bloomed plants of *Uncle Toby*, large, violet purple; *Snowflake*, white; *Lord Elgin*, crimson; *Agrippa*, white, dark disk, narrowly edged with purplish crimson; *W. Reeves*, white, edged with rosy crimson; and *Miss Smith*, white, dark disk, purplish violet edge. Mr. Fairbairn, gardener to the Duke of Northumberland, *Sion House*, who was second, had *Captain Schreiber*, light blue; *Lady Theodore Grosvenor*, white, with a broad blue edge; *Prince of Wales*, rosy crimson, with a narrow white ring round the disk; *William Dobson*, deep crimson; and *Beatrice*, white, edged with purplish crimson. Mr. Marcham, gardener to E. Oates, Esq., Hanwell, was third.

Mr. James was the only exhibitor of *Calceolarias*, and received a first prize for plants in very good bloom of the same excellent strain which he usually exhibits.

Of *Amaryllids* there were only two sets of six, one from Messrs. Veitch, which received the first prize, and the other from Mr. Williams, of Mollway, who was second. Messrs. Veitch had their new and handsomely-marked variety called *Pardina*, *Ackermannii pulcherrima*, large and showy, velvety scarlet; *Invincible*, dull scarlet, striped; *Madame Goldsmith*, very large and showy, broadly striped and feathered with white on a red ground, a very fine variety; *Belle Brunette*, not so large, but somewhat similar in character; and *Vittata rubra*, deep red, striped with white. Mr. Williams had *Regina*, bright scarlet, striped at the base of the segments; *Robusta* and *Purpurea magnifica*, crimson scarlet, the latter very dark in colour; *Graviana*, scarlet, with a white throat, good; *Johnsoni*; and *Cleopatra*, crimson scarlet, striped with white.

Of *Camellias*, cut blooms were furnished by Mr. Bull, Mr. Wilkie, and Mr. Trussler, gardener to D. J. Kay, Esq., Hoddesdon, who received prizes in the order named, also by Messrs. Lee, of Hammer-smith; and Mr. Wilkie had a first prize for three plants in bloom.

Cyclamens, as already remarked, were of first-rate excellence, especially those from Mr. Wiggins, gardener to W. Beck, Esq., of Isleworth, who gained the first prize, and who likewise exhibited a collection, for which he took an extra prize. One potful, in particular, formed such a dense mass of bloom, that it would have required a very considerable amount of time and patience to have counted the number of flowers. Mr. Fairbairn and Mr. James were respectively second and third.

The miscellaneous class was a most interesting one, being, in fact, a show of itself, and though only three prizes were offered, the Judges having, from a want of competition in two or three of the classes, a small sum at command, were enabled to award several extra prizes; but as the miscellaneous class has of late acquired great interest and importance, it may be questioned whether a larger amount of prizes might not be left to the discretion of the Judges to award in it should no accidental circumstance such as that referred to occur. Mr. Wilkie

took the first prize with a collection of flowering plants, in which were *Azalea*, *Rhododendrons*, *Hoteia japonica*, and *Lily of the Valley*. Mr. Williams, of Holloway, had a second prize for a collection, consisting of *Palms*, *Azaleas*, *Ferns*, *Heaths*, *Clematis*, *Dracænas*, *Yuccas*, and a *Begonia* which roots at the joints, and is of Ivy-like habit. Mr. Kettlewell, of Potter's Bar, also obtained a second prize for a collection, in which were *Azaleas*, *Pelargoniums*, *Hydrangeas*, *Dendrobium nobile*, and double-flowered *Petunias*; and Mr. Ware, Hale Farm Nurseries, Tottenham, was third with a very interesting collection, in which there were many beautiful herbaceous plants. Among them were the white-flowered *Primula Munroi*, *P. cortusoides amona*, *Cyclamen repandum*, deep crimson; a showy mass of the yellow *Hose-in-Hose Primula*, *Polyanthuses*, *Gentiana acaulis*, pretty little *Anbrietias*, both variegated and plain-leaved, various *Forget-me-nots*, *Celsia cretica*, *Faringium grande*, *Funkias*, and the *Ancuba-leaved Daisy*. Messrs. Veitch sent *Anthurium Scherzerianum* in splendid condition; *Clematis John Gould Veitch*, with large lilac blue flowers, in which there are four or five tiers of petals, a very showy free-flowering hardy climber; and *Azalea James Veitch*, with bright crimson flowers. Mr. Bull contributed two well-matched fine plants of *Agave filifera*, *Pandanads*, *Palms*, *Yuccas*, *Ferns*, *Anthurium Scherzerianum*, *Uropodium Lindenii*, and *Lasiandra macrantha*, a *Melastomaceus* plant with purplish violet flowers at least 4 inches in diameter. Messrs. Lee, of Hammersmith, had *Camellias*, a vigorous-growing handsome *Cibotium*, and a magnificent specimen of *Medinilla magnifica*, with upwards of a score of its large and handsome pendulous bright pink panicles. Mr. Watson, St. Albans, and Messrs. F. & A. Smith, of Dulwich, had *Tricolor Pelargoniums*, of which one called Mrs. Gladstone, shown by the former, had very thick leathery foliage; Mr. Marcham, fine-leaved *Begonias*; Mr. Kettlewell, *Pelargoniums* for forcing and market purposes, in excellent bloom; and Mr. Roberts, gardener to Lord Cranworth, Holmwood, Bromley, strong well-grown *Neapolitan Violets* and *Mignonette*. *Clerodendron Bungei* with large leaves, variegated with cream colour, came from M. Jean Verschaffelt, of Ghent, and two seedling *Sikkim Rhododendrons* from Mr. Osman, gardener to R. Holland, Esq., Stanmore.

Mr. Wiggins took an extra prize for an excellent collection of *Polyanthuses*, of which flower Mr. Marcham had also good examples; and Mr. Turner, of Slough, and Mr. James, of Isleworth, received extra prizes for beautiful collections of *Auriculas*, remarkable for their vigour of growth, the size of truss and pip, and the beauty of their colours. It may be useful to name half a dozen of the best in each class as shown by Mr. Turner. These were: *Green edges*—Cheetham's Lancashire Hero (shown as a green edge), Campbell's Admiral Napier, Oliver's Lovely Ann, Traill's General Neill, Litton's Imperator, Dickson's Duke of Cambridge. *Grey edges*—Headley's George Lightbody, Turner's Colonel Champeys, a splendid new variety, Lightbody's Richard Headley, Chapman's Sophia, Read's Miss Giddings, Sir William Wallace. *White edges*—Taylor's Glory, Leigh's Bright Venus, Lightbody's Fair Maid and Countess of Dunmore, Summerscales' Catharina, Ashworth's Regulator. *Selys*—Spalding's Metropolitan, Sims' Vulcan, Turner's Cheerfulness, Lightbody's Meteor Flag, Turner's Crown Prince, and Bishop of Liebfeld. Turner's Canary is also very showy as a yellow. Mr. James had fine examples of several of the above, *Formosa*, *Mayfield*, Turner's *Crown Prince*, *Blackbird*, Mrs. Sturrock, Lancashire Hero, Conqueror of Europe, Ann Smith, Robert Burns, Bright Venus, Lass of Wilton, &c., and his collection both individually and as a whole was most praiseworthy. Mr. Turner also obtained an extra prize for a collection of *Alpine Auriculas*, which, though not esteemed florists' flowers, are nevertheless very ornamental, and are of more easy culture. This class of *Auriculas* he has greatly improved, and in it, chiefly through his exertions, we have now many fine varieties. Such are *Landseer*, deep maroon; *Jessie*, shaded violet; *Princess*; *Tidian*, brownish crimson; *Sir R. Napier*, and *Black Prince*.

The other subjects which it remains for us to notice were *Pansy* blooms from Mr. Bragg, of Slough, and Mr. Hooper, of Batb, from the latter of whom one called *Sunset*, a showy yellow kind, was shown as a "hedder"; and lastly, a cluster of *Musa Cavendishii* weighing 56 lbs., sent by Mr. Sage, gardener to Earl Brownlow at Ashridge.

It may be well here to mention in conclusion, that the period during which Messrs. Lane's Show will continue open has been extended to Saturday next. That it is well worthy of inspection we have already remarked.

FRUIT COMMITTEE, April 21st.—G. F. Wilson, Esq., F.R.S., [in the chair. In vegetables a prize was offered for the best brace of Cucumber. Mr. Earley, gardener to F. Pryor, Esq., Digswell, exhibited *Kenyon's Improved*; Mr. Parsons, gardener to R. Attenborough, Esq., Acton Green, sent *Gunner's Green*; Mr. Cadger, Luton Park, sent *Dale's Conqueror* and *Berkshire Champion*. The first prize was awarded to Mr. Earley's *Kenyon's Improved*, and the second prize to Mr. Cadger's *Dale's Conqueror*. Mr. Cadger also exhibited specimens of *Prince of Wales Kidney Potato*, which, when cooked, was found to possess great excellence, and was highly commended. Mr. William Paul sent samples of *Waltham Market Cabbage*; Mr. Whiting, of The Deepdene, sent samples of *Anderson's Protecting Broccoli*, which were much admired. A very fine collection of thirty-four varieties of *Lettuces* was sent from the Society's garden at Chiswick. Mr. Stevens, of Trentham, sent a very fine dish of *Black Tartarian Cherries*, which

were so meritorious that the Committee unanimously awarded them a special certificate. Mr. Cox, of Redleaf, sent a dish of *Knight's Monarch Pear*, which had been preserved in corkdust. The fruit was in fine condition, and some of the specimens appeared as if they would keep very much longer; and the corkdust did not in the least communicate any flavour to the fruit.

A prize was offered for the best three dishes of dessert Apples. Mr. Cox, of Redleaf, sent *Formosa Pippin*, *Golden Harvey*, *Golden Knob*, and another collection consisting of *Court of Wick*, *Harvey Pippin*, and *Russet Nonpareil*. Mr. Parsons, Acton Green, sent *Golden Reinette*, *Golden Russet*, and *Dutch Mignonne*. Mr. Dixon, gardener to Lady Holland, Holland House, sent *Wyken Pippin*, *Cluster Golden Pippin*, and *Golden Knob*. Mr. Cox's first collection received the first prize. As there was no other collection of sufficient merit, the second prize was not awarded. For kitchen Apples, Mr. Parsons sent *Dumelow's Seedling*, *Alfriston*, and *Northern Greening*. Mr. Dixon sent *French Crab*, *Norfolk Beefing*, and *London Pippin*. Mr. Cox, of Redleaf, sent *Scarlet Winter Pearmain*, *Claude*, and *Dumelow's Seedling*. Mr. Parsons received the first prize, and Mr. Cox the second.

FLORAL COMMITTEE, April 21st.—There were many entries of plants for the examination of the Committee, some of them of considerable interest. The number of certificates granted will prove that there was much to be done; indeed, the great increase of subjects sent to the Tuesday meetings will necessitate punctuality in the attendance of the members of the Committee, and the request this day made by the Council, that business should commence henceforth punctually at eleven o'clock must be strictly observed.

Among the exhibitors, Mr. Roberts sent specimens of *Neapolitan Violets* and *Mignonette*; Mr. Hooper, Bath, cut flowers of *Pansies*; Messrs. Veitch a fine collection of *Orchids* and greenhouse spring-flowering plants, *Clematis John Gould Veitch*, a pale, double, light blue or grey variety, which was awarded a first-class certificate; and a weeping Fern well suited for basket work, with its palmate fronds, *Acrostichum palmatum*—first-class certificate. Messrs. Veitch received a special certificate for their collection of *Orchids*, and one for their collection of greenhouse spring-flowering plants. Among the *Orchids* was a weak specimen of *Nasonia cinnabarina*. Although much is said in praise of this *Orchid*, small and beautiful as it may be, the opinion of its real merits in its present state of cultivation cannot be defined; it must be seen again in better condition to gain a position among its fellows. Messrs. Veitch also sent *Cupressus macrocarpa variegata*, which received a first-class certificate in 1867; *Gesnera macrantha*, of which we shall hear more; *Pteris serrulata variegata*; an *Echeveria*, called *agavoides*; *Agave schidigera*, *Phalenopsis Parishii*, *Angulca uniflora splendens*, exhibited at the previous meeting as a species not then named, and which received a first-class certificate; and *Zygotetium brachypetalum*. Among the beautiful spring-flowering collection, *Azalea Stella* was very conspicuous. It is one of the best varieties in cultivation.

Mr. Williams, Holloway, received first-class certificates for *Cibotium spectabile* and *Cibotium regale*, two magnificent tree Ferns; also for *Asplenium auriculatum*, and *Zamia Ghellinchi*, of which latter the specific name is to be changed. Mr. Williams also had a special certificate for a handsome group of *Amaryllis*. Mr. Bull received a certificate for *Cibotium regale*, also exhibited by Mr. Williams, and a special certificate for his collection of plants. M. Jean Verschaffelt sent plants of *Clerodendron Bungei variegatum*. Some doubt was expressed as to its habit; should it stand the test of being planted out of doors in the summer months, it will prove a great acquisition.

Mr. Parsons, Daneshury, sent *Azalea Magenta Queen*, not equal to *Cedo Nulli*, or *Perfection*, of the same shade of colour. From Messrs. Rollisson, Tooting, came *Juniperus excelsa stricta*, a neat and elegant shrub, perfectly hardy, which received a first-class certificate; also *Rhododendron fragrantissimum*, with beautiful large white flowers stained with rose, and highly scented. To this a first-class certificate was also awarded. *Saccolabium ampallaceum moulineense*, from the same firm, with dark purplish rose flowers, was one of the prettiest specimens yet exhibited, although not new. A special certificate was awarded it.

Mr. Rae, gardener to the Earl of Eglinton, sent a collection of *ent Cinerarias*; plants of *Cinerarias* must be seen to judge of their merits. Messrs. Downie, Laird, & Laing had a small group of *Zonal Pelargoniums* of the *Golden Bronze* section, well grown and very effective. A special certificate was awarded. The same firm received also a special certificate for some fine specimens of *Pansies*. Mr. Wilson, gardener to W. Marshall, Esq., was awarded a first-class certificate for *Oncidium Marshallii*, the finest *Oncidium* yet seen, with large, fine, spreading yellow flowers; a first-class certificate for *Oncidium serratum*, very beautiful; and a second-class certificate for *Oncidium pubes*. A very fine specimen of *Odontoglossum triumphans* was awarded a special certificate.

Mr. William Paul gained a first-class certificate for *Madame la Baronne de Rothschild*, a new Rose, pale silvery pink, a lovely flower, not very double in the present season, but valuable for its shade of colour, and which will, doubtless, improve. Messrs. Smith, of Dulwich, sent a pretty collection of *Variegated Zonal Pelargoniums*, which was awarded a special certificate. Messrs. Paul & Son, Chesham, exhibited a small group of *Fritillarias*, among them a novelty, *F. pallidiflora*; a special certificate was awarded. Plants of this class

are objects of great interest, and the members of the Society would be greatly pleased to have more frequent exhibition of them.

Mr. Sherratt, gardener to J. Bateman, Esq., received a special certificate for some very fine spikes of *Dendrobium Dalhousianum*. Mr. Baxter, gardener to C. Keiser, Esq., Broxbourne, exhibited a cat flower of a *Cattleya* sent out from the Society's gardens four years ago, one of Mr. Weir's introduction, and which was found to be *C. intermedia*. A special certificate was awarded to Mr. Baxter for his collection of *Amaryllids*. A seedling dark crimson variety of fine form, named Rembrandt, was awarded a first-class certificate. Mr. Stone, gardener to J. Day, Esq., Tottenham, received a first-class certificate for *Saccolabium curvifolium luteum*, with deep yellow flowers, and a special for his collection of Orchids.

Mr. Dean, Shipley Nurseries, Bradford, had a first-class certificate for *Lomaria gibba* major, a very fine Fern; Messrs. E. G. Henderson a special certificate for good specimens of *Blandfordia*, also for a nice collection of Orchids. Mr. Green, gardener to W. W. Saunders, Esq., was awarded a special certificate for a very curious and interesting collection of plants. Mr. Stevens, Ealing, sent a double white *Petunia* named Excellent, two variegated *Pelargoniums* out of condition, but very promising, and called Beauty of Ealing and Mrs. Stevens; also a rough-leaved seedling variegated Ivy-leaved *Pelargonium*, too coarse for bedding or any purpose. Mr. Mills, gardener to Dr. Pattison, St. John's Wood, sent a fine specimen of *Oncidium bifolium*, which was awarded a special certificate; and Mr. R. J. Veitch, Exeter, sent specimens of a seedling white *Azalea* not named, and rather rough in outline. Mr. Kieghorn exhibited a small specimen of his striped seedling *Azalea Lizzie*, which well maintains its character and desert of a first-class certificate.

GENERAL MEETING.—W. Wilson Saunders, Esq., F.R.S., in the chair. After a list of donations of plants and seeds had been read, and a vote of thanks accorded to the donors, ten new Fellows were elected, and the South Nottinghamshire Horticultural Society was admitted into union. The awards of the Fruit and Floral Committees having been reported as usual to the Meeting, the Chairman called on the Rev. M. J. Berkeley to make any remarks which he might have to offer.

Mr. Berkeley said that at the last Meeting a magnificent *Gesnera* had been exhibited by Mr. R. Tanton, nurseryman, of Epsom, and which had been sent home by Mr. Tanton's brother. Two members of the Floral Committee thought at the time it was exhibited that it was identical with *Gesnera macrantha purpurea*; and on referring to the "Gardener's Magazine of Botany," published some years ago, he found a very exact representation of the plant, and it was there stated that an unknown *Gesnera* crossed with *Gesnera Cooperi*, which is a form of *Gesnera bulbosa*, gave *Gesnera macrantha*; that *Gesnera macrantha* crossed with another variety gave *Gesnera macrantha purpurea* which agrees perfectly with the natural hybrid. Here then, if the two plants—that naturally and that artificially produced—were identical, we had an important illustration of the Darwinian theory. Mr. Tanton, who some years ago was one of the foremen at Chiswick, remarked in a letter:—"I have for years grown and been very fond of this family, especially the old species. The true *Gesnera macrantha purpurea* has a blackish purple lip, while my imported species has only two small purplish blotches on each side of the lip and partially down the throat. Again, in growing, it is dwarfer in habit, leaves larger and more fleshy, especially the lamina, and has withal a tendency to flower perpetually. The plant I exhibited has been in flower upwards of two months, and to all appearance from the buds which continue to emanate from the axils of the flowers it will bloom two or three months longer. Now, *G. macrantha purpurea* flowers and is gone in a month, and the growth immediately dies away and the bulb goes to rest. The same is the case with *G. bulbosa*, *Cooperi*, &c."

Mr. Tanton had promised to send the plant again, and he (Mr. Berkeley), had requested Messrs. Veitch to send a plant of *G. macrantha purpurea* for comparison, and he hoped others would do the same.

On two or three occasions lately they had had instances of abnormal structure in Orchids. In one case there was a double column, in another a double lip; and in a *Cypripedium* at the last meeting the lip was almost altogether obliterated, whilst at this there was a flower of *Cattleya amethystina* with only three of its divisions developed. Attention was then directed to *Ismene calathina* from Mr. Wilson Saunders, and an extremely interesting *Sarrumatum*, *S. asperum*, from the same gentleman, and which was one of those species which throw up a beautifully variegated stem, this being produced after the flowers. The latter were not remarkable for their beauty, and in some plants of this order are extremely offensive; so much so that one—*Conophallus bulbifer*, was kept outside the room. *Blandfordia flammula* and *Cunninghami* then came under notice; and Mr. Berkeley observed that Sir William Hooker, in describing *B. flammula*, remarked on the extreme variability of the species, saying of *B. Cunninghami*, discovered by Allan Cunningham, "Fine specimens of the plant are in our herbarium, gathered in the Blue Mountains; but so variable were the species of *Blandfordia* considered by that practical botanist Mr. Cunningham, that he has indicated it as '*B. nobilis*: very luxuriant specimens from a stiff and clayey bank, beneath a permanent elevated peaty bog.'" The specimens before the meeting confirmed the remark of Sir W. Hooker.

Mr. Berkeley said he would next call attention to a beautiful Fern, a sport of *Lomaria gibba*, sent by Mr. Dean, of the Shipley Nurseries, and which, if examined, would be found to possess no characteristic of *Lomaria gibba*, but to be a true *Blechnum*; and other instances were quoted of the extreme instability of the genera of Ferns, in some of which as many as three or four so-called genera might be observed, according to the degree of development acquired under the circumstances in which they were growing. With regard to *Gibetium regale* and spectabile which were also shown, he understood from persons who had seen them at Ghent, that they were there quite magnificent, having stems as thick as one's arm. He had lately drawn attention to a case of fasciation in *Primula denticulata*, in which the flower stems had become flattened—in fact, incorporated together, but he had never seen fasciation carried to such an extent as in the *Polyanthus* sent by Mr. Cox, of Redleaf, to the present meeting, and the effect of which was extremely beautiful. A plant sent by Messrs. Veitch under the name of *Echeveria agavoides*, but whose proper specific name was *aloides*, it was stated might prove useful for edgings to beds or borders.

Mr. Berkeley said he had now a subject of some importance to bring before the Society. At a meeting of the Society of Arts on Wednesday last the subject of Fungi as an article of food was under discussion, and it was suggested that the Royal Horticultural Society should offer a prize for collections of edible Fungi. One of these, *Agaricus gambosus*, which was sometimes sold in Covent Garden, would probably come in in a few days, and, therefore, it might not be possible to have that in autumn, still there were many that came in together at that season, and a friend of his had proposed a prize for edible Fungi in September. At the same time it was suggested that those known to be poisonous should also be shown.

Mr. Saunders said, with regard to *Ismene calathina* that it was closely allied to *Pancratium*, and was of easy culture. Coming from the warmer parts of Peru, the bulb, after resting, required to be removed to a warmer place after it began to push. As to *Echeveria aloides*, the plant, he believed, was now seen for the first time in flower in this country. It was closely allied to the second section, and might be useful for the same purposes; but *Echeveria glauca*, he believed, would beat it some day.

Mr. Bateman said that the only drawback to an exhibition of Fungi in September would be so many of the members of the Society being out of town, and suggested that the Fungi should be properly dressed, for some that were otherwise poisonous became wholesome when cooked. With regard to Orchids, there was one pre-eminently splendid—*Oncidium Marshallianum*, which must be admitted to bear away the palm from all yellow *Oncids*. When at Berlin he had seen dried specimens of it in the museum, but the first time he had seen it alive was at one of the Regent's Park shows, and then it had only half the number of flowers, and probably in course of time the number of these would be very largely increased. Referring then to *Saccolabium ampullaceum*, the ordinary pale pink variety was considered very fine, but the power of rose could go no farther than in the fine Moulmein variety shown by Messrs. Rolleston, and which he believed formed part of a small parcel of spotted-leaved varieties, imported by Messrs. Low several years ago. Of *Saccolabium curvifolium*, the ordinary colour was the richest cinnabar, but in the variety shown by Mr. Day it was a fine yellow; but though this variety was interesting as a sport, it was not so beautiful as its original. With regard to *Oncidium serotum*, exhibited by Mr. Marshall, it afforded an example of abnormal structure, two of the petals having become conjoined; but when it first flowered with the Bishop of Winchester some of the flowers were without sepals, others without petals.

Next came the genus *Dendrobium*, and among them was *D. Tattorianum*, named after Lord Egerton, of Tatton, and which was not the most remarkable plant of its family, still its flowers were agreeably fragrant, and would last at least two months in perfection, if the plant was properly grown. Because *D. speciosum* also comes from Australia, and would succeed in a greenhouse temperature, people must not suppose that *D. Tattorianum* would do with the same temperature, for the former came from the south, the latter from the north of that island-continent, and from within a few degrees of the equator. Like Cape bulbs, it wanted a good roasting for half the year, then with plenty of heat and moisture it would send up its beautiful racemes. Messrs. Veitch's new *Dendrobium lasioglossum*, from India, he would for the present merely mention. After noticing some cut blooms of *Dendrobiums* from his own garden, among which were the white variety of *Dendrobium nobile*, sometimes misnamed *D. Wallichianum*, and *D. Dalhousianum*, a species producing noble racemes of buff flowers, which remain long in perfection. Mr. Bateman pointed out the splendid specimen of *Oncidium bifolium*, with a spike 2 feet 4 inches in length, shown by Mr. Mills, gardener to Dr. Pattison, and which, he said, would have astonished Orchid-growers thirty years ago. Of *Odontoglossum luteo-purpureum* a number was shown, and in a cool house it did well to mix with other Orchids; and of *Odontoglossum triumphans*, the specimen from Mr. Marshall was deserving of particular attention.

Mr. Bateman next produced to the Meeting a small specimen of the pretty *Cypripedium concolor*, with two flowers, which he believed to be the normal number the plant produces. The genus *Cypripedium* was remarkable for its different tints, and *C. caudatum*, which produces long string-like appendages, which grow at the rate of

2 inches a-day until they attain 2 feet in length was specially noticed. To those who did not wish to grow a large collection of Orchids, he could recommend this genus, of which there were about twenty species available, and all could be easily grown. One might have eight of these in flower at the present time. A beautiful flower of a Cattleya from Mr. Rucker was then exhibited by Mr. Bateman, but he said that it was only one of many varieties of *C. labiata*, between which, *C. Mossie*, and many so-called species the line could no longer be drawn, and they must therefore be "smashed." As a further instance of the diversity of colours which Cattleyas assume, he exhibited two flowers from plants sent home in the same pot by Mr. Weir, one being white, the other of various colours.

Passing to other subjects, Mr. Bateman said he observed that some *Disas* and *Satyriums* were to be sold at Stevens's, and he would just warn those who might be the purchasers not to treat them like *Disa grandiflora*, which is almost an aquatic, whilst these are totally different, and should be treated like Cape bulbs. He remembered being told by Dr. Lindley that no Orchids were comparable in colour to these *Disas* and *Satyriums*, and that among them were blues, yellows, and many other colours. With regard to the Bateman Challenge Medal for Orchids, he had originally intended to offer it to the most successful exhibitor of these in two consecutive years, and had no idea he should have been called upon for a fresh medal so often, but as Mr. Veitch and Mr. Anderson had each carried it off, he must make a fresh arrangement. At first he thought to handicap these two exhibitors heavily, so as to afford others a chance, but the arrangement which he should adopt would probably be this: Next year before Easter the marks should be for the exhibition of *Odontoglossums*, and after Easter for that of *Cypripediums*; but the competitors must also have gained certificates at the Tuesday Meetings. Another matter which he had to mention was the memorial to the late Mr. Skinner. Last year he had had promises of about £100 for the purpose, but the sum he had received fell very far short of that amount, and to borrow an expression from the mortuary column of the *Times*, "Friends will please to take this intimation." He handed the money over to Mr. Wilson Saunders, and as soon as a sufficient amount was received orders would be given for a neat granite memorial fountain to be erected in the garden of the Society.

Mr. Bateman concluded by observing that at the next meeting on the 5th of May, he intended to call attention to the Lognat, which had been fruited both by himself and at Lord Ragots's, and of which, though the quality of the fruit obtained had been good, the quantity was small.

Mr. Saunders said that with regard to the memorial to the late Mr. Skinner, the money in hand was about £40, and he should be glad to receive any subscriptions not paid to Mr. Bateman.

SALE OF HYBRID COLEUSES.

THE collection of twelve beautiful hybrid Coleuses, raised in the Royal Horticultural Society's garden at Chiswick, by Mr. Bause, was yesterday offered for sale by Mr. J. C. Stevens, at his rooms, King Street, Covent Garden. The large room was crowded by leading nurserymen and amateurs, who took a lively interest in the proceedings. Colonel Scott and several members of the Council were present, and among the company we observed Sir Philip De M. G. Egerton, Bart., and other eminent patrons of horticulture.

The competition was spirited and rapid, and the following is the result, with the names of the fortunate possessors:—

Lot 1.— <i>Coleus Berkeleyi</i>	Messrs. Veitch & Sons.....	40 guineas.
" 2.— <i>C. Marshallii</i>	Mr. Willis	25 "
" 3.— <i>C. Saundersii</i>	Messrs. Veitch & Sons.....	26 pounds.
" 4.— <i>C. Dixii</i>	Messrs. Carter & Co.....	49 "
" 5.— <i>C. Ruckeri</i>	Messrs. Veitch & Sons.....	40 guineas.
" 6.— <i>C. Murrayi</i>	Mr. Willis	25 "
" 7.— <i>C. Bausei</i>	Messrs. Veitch & Sons.....	50 "
" 8.— <i>C. Gotti</i>	"	36 "
" 9.— <i>C. Clerkii</i>	Messrs. Carter & Co.....	40 "
" 10.— <i>C. Batemanii</i>	Messrs. Veitch & Sons.....	49 "
" 11.— <i>C. Wilsoni</i>	Messrs. Carter & Co.....	14 "
" 12.— <i>C. Reevesii</i>	"	5 "

The total sale, therefore amounts to the sum of £393 3s., and we congratulate the fortunate purchasers on having become possessed of those charming plants.

Not the least gratifying feature in connection with this sale is that the whole of the amount realised will be retained as a separate fund, and appropriated to the development of further experiments at Chiswick garden.

THE SCIENTIFIC COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY.

THE first meeting of the Scientific Committee of the Royal Horticultural Society was held on Monday last the 20th inst., W. Wilson Saunders, Esq., F.R.S., in the chair. As this was merely an inaugural meeting, the main business transacted was the constitution of the Committee, and the consideration

of the modes in which its ultimate working will be conducted. The Committee as it at present exists is constituted as follows: *Chairman*.—The Duke of Buccleuch, K.G. *Vice-Chairmen*.—*Warren De la Rue, Ph.D., F.R.S.; *W. Wilson Saunders, F.R.S.; *Thomas Thomson, M.D., F.R.S. *Secretary*.—*Rev. M. J. Berkeley. *Members*.—*Abel, Frederick Augustus, F.R.S.; Baker, J. G.; Bateman, James, F.R.S.; Bentham, George, F.R.S., P.L.S.; Bentley, Professor Robert, F.L.S.; Blenkins, George E.; *Clarke, Major Trevor; Darwin, Charles, M.A., F.R.S.; Dix, Rev. Joshua; *Fortune, Robert; Frankland, Professor Edward; Gibbs, E. T. Brandreth; *Gilbert, Dr. J. H.; Glaisher, James, F.R.S.; Henry, J. Anderson, F.L.S.; *Hogg, Robert, LL.D., F.L.S.; Hooker, Dr. Joseph, F.R.S.; Howard, J. E., F.L.S.; Johnson, George William; *Marshall, William; *Masters, Maxwell T., M.D., F.L.S.; Miers, John, F.R.S.; Munby, Giles; *Murray, Andrew, F.L.S.; *Moore, Thomas, F.L.S.; Reeves, J. Russell, F.R.S.; Rucker, Sigismund, F.L.S.; *Scott, Lieut.-Col., R.E., F.L.S.; Spencer, Herbert; *Voelcker, Dr.; *Wilson, George F., F.R.S.; *Welwitsch, F., M.D., F.L.S. Of these, those marked with an asterisk were present at the meeting.

It was proposed that as insects and the study of their habits and economy have very important bearings on the culture, reproduction, and diseases of plants, the following eminent entomologists should be invited to join the Committee—Professor Westwood, F.L.S., Sir John Lubbock, Bart., F.R.S., and H. T. Stainton, Esq., F.L.S. The Rev. M. J. Berkeley, the Secretary, then read the following address:—

"As this is the first meeting of the Scientific Committee of the Horticultural Society, it seems advisable that the Secretary should offer some observations on its objects, and the best means of carrying them out effectually. It is above all things necessary that we should perfectly understand the position in which we are placed as a Committee, and the more especially as its members are not necessarily Fellows of the Society.

"The Society, it must be remembered, is not exactly in the same position as most other learned societies, with the exception perhaps of the Zoological Society. Though the income is large, it is not simply available, as in other scientific bodies, for purely scientific objects. The funds applicable to publication are necessarily limited, and it is to this cause especially that the discontinuance of the first series of the Journal, and the occasional appearance of the new series, are attributable, and not to any lukewarmness or narrowness of views on the part of the Society. If the history of the learned societies were to be accurately traced, we should find that the appearance of their transactions has for the most part been irregular, and in consequence, the publication of important papers has frequently been seriously delayed, and for this, amongst other reasons, the 'Comptes Rendus' of the meetings of the French Institute was projected, to enable authors of valuable memoirs to register their discoveries, or in other words 'pour prendre date.' It must not therefore be assumed that our Journal can be published oftener than once or twice a year, or under the most favourable circumstances more frequently than once a quarter, but as reports will undoubtedly appear in our leading horticultural papers, no unwillingness on the part of authors to present memoirs at our meetings need on this score be anticipated.

"The object of our meetings, as stated in the number of the Proceedings just published, is to promote and encourage the application of physiology and botany to purposes of practical culture, whether of plants, or trees, or shrubs, and to originate experiments which may assist in the elucidation of such questions. The terms, it is clear, are sufficiently large to include everything which can come within the scope of a Botanical Committee, and are by no means to be confined to what may strictly be termed physiology or biology. Morphology as well as vital action will occasionally come before us, questions of correct nomenclature, information of general horticultural or more purely botanical interest, botanical geography—in short, everything which does not fairly come within the compass of the Floral or Fruit Committees. The several horticultural directors will naturally bring before us any matter of interest which may occur in the fruit or floral departments, or which may suggest itself at Chiswick, such as have usually been laid before the Society at its Tuesday meetings, doubtful plants will be presented to us for determination, subjects which require elucidation will be mooted, and occasional papers read in accordance with the especial objects of the Committee. Not only is it hoped that individual members of the Committee will help us, but the co-operation of the Fellows of the Society in general, and indeed of men of science, whether members or not, is earnestly invited.

"As regards purely physiological matters it is highly necessary that we should set out with a distinct understanding. It is easy to suggest experiments, but we must at the same time appreciate the difficulties which attend them. Any expectation that the Society itself can at once enter upon a large series of delicate experiments would only meet with disappointment. We ourselves cannot fail to appreciate at once the difficulties of the subject, but it is necessary also that the members of the Society, and the horticultural world in general, should equally realise the true state of the case. The successful conduct of

purely physiological experiments requires an innate love of the necessary research, unwearied labour in the pursuit, uninterrupted leisure, and a rare combination of tact and talent; patient of failure, yet confident of ultimate success; at once free from prejudice, and ardent in the pursuit of the especial object of research. It must be a labour of love or it will lead to nothing. The Society trusts that the establishment of this Committee may inspire some of its members with the requisite zeal; but it must at once be clearly understood that it would be impossible for it as a preliminary step to organise a staff purely for such a purpose. It would be almost hopeless at the present moment to find a person competent for the leader of such a staff, even at a large salary; several assistants would be requisite, perfect instruments and a chemical laboratory, while the person who might be great in one direction would be almost useless in another. Such investigations must to a great extent be carried out in the first instance at least, by private individuals, but the Society would not be backward in giving pecuniary assistance where there was a reasonable prospect of important results. Minor experiments would indeed immediately come within the scope of the Society, as the reciprocal influence of stock and graft, the modifications produced by different stocks, varieties in the mode of culture, the influence of different kinds of manure, and indeed a host of other matters meteorological, physiological, and practical, which may tend to the promotion of scientific horticulture.

There is also another direction in which the Committee might be extremely useful, and which would at once be acceptable to all our members, and to all lovers of horticulture. It is frequently a complaint that plants in collections are so badly named, and that the correct appreciation of what may be called their botanical attributes, in contradistinction to those which are simply floricultural, is at present so very imperfect. This arises in great measure from the want of useful manuals, from which the necessary information can be obtained. When the number of plants under cultivation was comparatively small, the '*Hortus Kewensis*' was available for the more scientific gardeners, but though there are some praiseworthy exceptions, such as London's, the cultivator is for the most part compelled to pore over mere catalogues, which can give him only an empirical knowledge, while as frequently he will fall into error. It is believed that the publication of a series of manuals, judiciously selected, would be highly calculated to promote a general love of scientific botany where there is at present mere floricultural knowledge, and the more so as the desire of mere display seems on the wane, while an appreciation of elegance of form and foliage, and delicacy and variety of structure is daily increasing. Each volume might be complete in itself, while if the plan were well carried out a series of publications would be produced, highly honourable to the Society and of great importance to horticulture. The suggestion I would observe originated with a member of our Committee, who has the power and the will at once to aid in the realisation of such a scheme, and when I mention Dr. Hooker as its originator, it will assuredly be evident how materially it might be promoted by the staff at the Herbarium and the superintendents of the different departments in the gardens at Kew. Suppose, for instance, we were to undertake a volume on Conifers, for which Gordon's manual is now quite insufficient, another on Herbaceous plants more usually cultivated, another on rock and Alpine plants, or to descend to especial genera, one illustrating *Dendrobium*, *Epidendrum*, and *Oncidium*. What a boon would such volumes be to our members. The scheme, moreover, with the aid which has been promised might be carried out at a comparatively small expense, and with a degree of speed and correctness which would be quite out of the power of any individual.

The Committee will of course be prepared to receive suggestions as to any other plans or modes of action which may be thought advisable, but it is absolutely necessary that such suggestions should be submitted in writing, that the terms may be distinctly understood. Their ultimate adoption will of course rest with the Council."

It was arranged that the meetings of the Committee will be held on the same days as the two other Committees meet, at half-past one o'clock. As this will necessitate greater punctuality on the part of the Fruit and Floral Committees, they will in future commence their work at eleven o'clock precisely, before which exhibitors should secure that their subjects are forward in time. It was also decided that the chemists should form a sub-committee, of which Dr. Warren De la Rue is to be Chairman, and Dr. Voelcker Secretary.

From the spirited conversation which pervaded the meeting, and the manifest interest which every member present appeared to take in the proceedings and in its future success, there can be no doubt that the step which has been taken by the Council in instituting the Committee has been a proper one; and composed as it is of men of the highest eminence in the departments of science to which they belong, there can be but one opinion—that if good is to result to horticulture by such an association, we have here the right material for securing it.

STANDARD ROSES ON LIGHT SOIL.

In each of the last three autumns I have planted about a dozen standard Roses, but none of them will thrive, and each

spring two or three of them die. This spring three, planted prior to last autumn, which looked well, and began to break nicely and come into leaf, have within the last week or ten days begun to wither, and look as if they would follow the example of those which have gone before them. Several cuttings, also, which looked well all through the winter, are now dying off. The soil is light and sandy over a gravelly subsoil, which I have enriched with stable manure. All the trees and cuttings were mulched with long litter during the winter.—W. M.

[Except in strong, unctuous, clay lands, I am an enemy to standard Roses, save of Tea-scented Noisettes and summer Roses, which do well on Briars in any land, however light, if properly attended to.]

The fault, however, is not always in the Briar or the Rose on it. The fact is, amateurs as yet know little about Rose-growing, or they have no time or inclination to grow Roses properly. I imagine "W. M.'s" Roses are simply frosted in their foliage, and that the withering of the leaves proceeds from that cause only. The cuttings that looked well all winter and are now dying off have probably made no root at all. If they have made roots and are not dead they will soon recover. I advise "W. M." to buy Roses on the Manetti stock and on their own roots. His ground is better suited to them. If purchased on the Manetti stock and properly planted, they will soon strike in such ground on their own roots.—W. F. RADCLIFFE.]

INDIAN MODE OF LAYERING.

The following are representations of the mode of separating a bearing branch of a fruit tree as practised in Bengal by the native gardeners, also in China.

The branch thus separated is planted in its proper place, and bears its fruit the same year, just as if it had remained upon the parent tree.

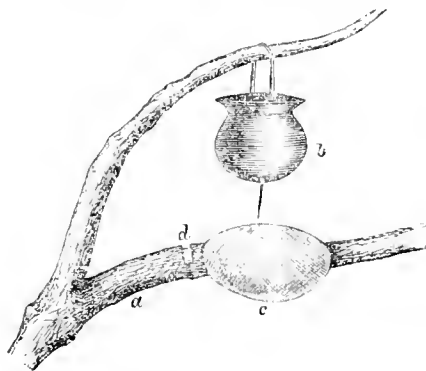


Fig. 1.

In fig. 1 *a* is an enlarged drawing of part of the branch; *b* is an earthen pot to hold water, which in the dry season of the year is daily supplied. There is a small hole in the bottom of the pot, in which a piece of string or straw is put, so as to conduct the water by drops to *c*. *c* is a ball of clay put round the branch at the place above that at which the branch is to be cut off. Round the clay is wrapped a piece of coarse sacking or sail cloth, which absorbs the water as it drops from the pot *b*, and keeps the clay continually moist. At *d*, just below the ball of clay, the bark of the branch to be separated is cut off and peeled down to the woody substance only as much as half round the branch, and about an inch in breadth. After a month or six weeks small fibres of roots will begin to appear through the clay (*c*, fig. 2), when the circle of bark must be

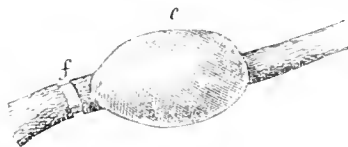


Fig. 2.

completed by cutting round the branch, and forming a complete ring, *f*, free from any bark. The fibres of the roots will

soon increase, and be observed to penetrate the coarse sackcloth and appear outside, and when these are sufficiently vigorous the branch may be cut off and planted.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, in cutting this for use see that the weak spindling shoots are cut off at the same time, that they may not hinder the better from coming regularly forward. *Broccoli*, seed should now be sown for the main supply next winter and spring. The Dwarf and Tall Sprouting are the most economical and useful of all the Cabbage tribe for winter Greens; if these are sown now, and again at the beginning of May, they will produce tender sprouts from November till this time next year. No cottage garden should be without these varieties, which are far preferable to *Borecole*. *Kidney Beans*, plant in boxes to be protected for a time, and in the open ground to take their chance of the season. *Peas and Beans*, together with *Spinach*, *Turnips*, *Salads*, and other succession crops, must now be sown oftener, and in smaller quantities till midsummer, as they will come in faster during hot weather. *Sea-kale*, clear away the litter and pots as the stools get past use. Cut over the shoots level with the ground, and dig over the beds, and if the stools throw up more shoots than can be fully exposed to the sun and air thin them out.

FRUIT GARDEN.

Plum and Pear trees will now be ready to have some of the strongest young shoots stopped. The Apricot, Plum, and Cherry must be carefully looked over to find the mischievous little caterpillar which shuts itself up by twisting the young foliage round its retreat. This caterpillar never occurs in great numbers, and is easily kept under. Now is an anxious time with the gardener while the host of winged insects, caterpillars, slugs, and worms are busy at their work of destruction, and perpetual war must be maintained against them, to say nothing of the care and judgment necessary in regulating the young shoots on wall and espalier trees.

FLOWER GARDEN.

Some of the early-sown annuals will now require thinning out, in doing which remove all but five or six of the strongest plants, and these, if not very strong, may have the terminal leaf buds removed to make them bushy. Stir the ground round the plants deeply with the hoe, and if they are weakly apply a slight dressing of guano, and then give a good soaking of water. Many of the herbaceous plants will now require a little thinning and training, and in regulating them do not bundle them up like so many pea sticks, but tie the branches out separately as you would a prize *Pelargonium*. Attend to the young growths of climbers before they become crowded, and remove any stray branches which are not likely to produce flowers. The covering from half-hardy plants may now be removed entirely in the daytime; but it will be well for a fortnight longer to stretch a mat over the tops of the plants for fear of frost. Keep all newly-planted trees well watered, and recently-laid turf should be watered and afterwards covered with old tan to prevent its burning. Examine *Roses* to see that the bud-worm is not at work, and dress them, if necessary, with tobacco water and soap-suds to clear them of the green fly. Many of the strong-growing hybrid China and French varieties will be the better of having some of the strong growths thinned out—indeed, no more branches should be left upon a *Rose* than can be properly exposed to the sun and air. Remove the strongest branches, which frequently run into gross shoots; the middle-sized ones generally produce the finest flowers. Auricles are in most situations fully expanded, with the exception of the northern counties, where they are somewhat later. In order to preserve the bloom the pots must be removed to a cold place, having a north aspect. The direct rays of the sun have a prejudicial effect on the colours, causing the dark or body colour to start or diffuse itself over the margin. Few spring flowers are so beautiful or more worthy of the trouble requisite to insure their perfection. This dry weather is trying to *Polyanthuses*, and is favourable to the attacks of red spider. This pest dislikes moisture. Should a plant be affected (which is soon ascertained by the margin of the leaves turning inwards and assuming a yellow hue), it is found that by watering it well and placing a common garden pot over it, occasionally discharging some Scotch snuff on the under sides of the leaves, the insect may be destroyed. The sticks had better be inserted in the blooming pots of Car-

nations, *Picotees*, and *Pinks*, to support some varieties that have a tendency to spindle early, and if delayed longer pushing the sticks down is apt to injure the roots. Keep the pots free from weeds.

GREENHOUSE AND CONSERVATORY.

Camellias now making their growth require larger portions of water daily if the pots are thoroughly drained. Orange trees also require more water for the next month than at any other time. Some of the *Passion-flowers*, *Ipomæas*, and other strong-growing climbers should now be close-pruned if you wish for a late display in autumn. In former years it was a prevalent opinion that *Heaths*, *Epacris*, and similar plants would be ruined if touched with a knife, but now it is proved that no plant bears pruning better, and men in nurseries may be seen cutting off the young tops of these in handfuls after the plants have done flowering. Other free-growing plants have their tops regularly pinched off at every other joint, in order to form them into round bushy specimens. Let the greenhouse be syringed every afternoon, and the house shut up at night till the growth of the principal tribes is nearly finished, when they may be kept more cool and dry to ripen them off slowly.

STOVE.

The plants in general promise to make a healthy and early growth this season, owing to the summer-like weather we have been favoured with; stimulants may, therefore, be applied earlier than usual to such strong-growing plants as are known to be so benefited. Stove plants at this stage and under strong sun can hardly be kept too hot in the daytime, provided a slight shade is thrown over the glass, the atmosphere being kept moist, and a free supply of air admitted, and under such treatment they can hardly be too cool at night. Young plants of which it is desired to form fine specimens should be watched, and as soon as their roots have reached the sides of the pots they must be fresh potted. Others, again, must be cramped at the roots to induce them to make short flowering spurs. Many of the climbing plants so treated may be made to assume the character of shrubs, to suit particular circumstances and situations.

PITS AND FRAMES.

Propagation by cuttings and grafts must be continued till a full stock is reared; tender annual seeds for late flowering may now be sown. Very many plants that are difficult to strike from cuttings may be easily increased by grafting on the roots of some allied species. All tender seedlings should be potted as soon as they can be handled. The plants are, of course, being removed from these structures to temporary protections as fast as possible. If they are not quite clean give them a good fumigating before they are taken out. Pot-off all recently-propagated plants, and see that you have a sufficient stock of everything to plant your beds properly; if not, put in some more cuttings without delay, and they will do admirably to fill up gaps in the summer.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

EVERYTHING out of doors was assuming a rather parched appearance, owing to the dry north and easterly winds. The shower of Friday evening, with the wind inclining more to the south, though often going back to the old quarter, made everything look quite different.

Peas planted-out, that were not so green as we like to see them, had the slightest dusting of soot thrown over them, and were then sprinkled from the rose of a watering pot, to enable them to receive better help from the anticipated shower; for we do not expect a very heavy rainfall just yet, and except in particular cases, several times referred to, we do not like sprinkling overhead in bright sunny weather. *Onions*, too, are now coming up vigorously. Some of our very forward neighbours have had to sow again; the keen frost was too much for the young *Onions*, and made them hang their heads, and most of them would never do good afterwards.

Lettuces coming on were hoed, to let air and moisture among them, and many that had been protected were planted out in rows; spring-sown ones out of doors have had the litter and branches removed that kept them from the birds, and it is amazing what a change a single day has made in their appearance.

Parsley.—Main crops were sown in rows, and that for use

nically hood, and plain specimens removed, in case it should be desirable to save a little for seed; but except when the sort is very fine indeed, it is hardly worth while to have the rubbishy appearance of seed beds of Parsley, when seed for a large establishment can be obtained for something like *Gd.* A few weeks ago we removed the row of Parsley from the front of the orchard house, as we wanted the place for setting two rows of Strawberry pots where they would come in a few weeks before plants in the open ground.

Removed the lights from the first-pricked-out *Celery*, and it is growing very freely and strongly with the help of a few large laurel branches laid across it, and these will be thinned gradually before being finally removed some time before the plants are taken to the trenches. Pricked out more *Celery* and young Cauliflowers, to be protected in the same way at first with evergreen boughs, and sowed *Celery* for the last crops. Even with early sowings we rarely have a run head.

In sowing Scarlet Runners, Peas, &c., the other day, in order to keep the seeds from depredators when below ground, to a certain extent, we dusted them over with red lead. Provided such large seeds are just damped previously, a little of the powdered lead, as much as one could hold on the blade of a knife, will colour a quart of such seeds sufficiently, and we have not perceived that it affects their germination at all injuriously.

Potatoes under the protection of old sashes could not be so freely exposed as we would have wished, on account of the north winds, but as soon as the weather became a little milder, we exposed them thoroughly all day, as such exposure causes them to keep more stubby, and to swell their tubers faster than when kept closer. Few of those in the borders are as yet making their appearance, but some forward at the foot of walls have been kept safe by just sprinkling a little dry litter over them, and sticking a few evergreen twigs in front of them. This work is quickly done, and the yield is always better if the top of the Potato is never injured by frost.

Cucumbers in Frames.—These have competed well, as lately stated, with those in a hot-water pit, bearing profusely; and from the time the plants were turned out in the bed, made in the rough-and-ready but safe mode lately adverted to, the frame has given no trouble except air-giving and watering. The only thing done was to lift the frame by placing a brick on the flat beneath each corner, as some of the leaves were touching the glass, and that might have injured them. The heat is still as steady and genial as when the bed was made, and the plants turned out. We would unhesitatingly recommend the plan detailed some time ago, to all amateurs who wish to make the most of their little fermenting material, and to save all trouble afterwards with earthing up their plants or bed.

Sowed a few Cucumber seeds for succession, and others for ridges and pickling, Vegetable Marrows, Tomatoes, &c., preferring to sow thus late to earlier, as the plants will do all the better if they never receive much of a check before being planted out. A small healthy plant will do better than a larger one that has been stunted and starved. Avoiding checks is one of the main elements of success.

FRUIT GARDEN.

What is said above about Cucumbers reminds us of some inquiries as to *Melons* treated in the same way. As previously stated, our frames are shallow, from 15 to 18 inches high at back, and from 9 to 12 inches deep in front. For either Cucumbers or Melons, it follows that the soil can only be a couple of inches higher than the bottom of the frame at back, and not quite so high as the bottom of the frame in front. As already stated, our soil is confined to a trench in the middle of the frame lengthwise, a sprinkling of soil being merely placed back and front to make it all alike in appearance. The frame for the Melons has needed no lifting, as the footstalks of the large leaves are not so long as those of Cucumbers. The soil in the centre gives quite sufficient depth to ripen a heavy crop, and as in the case of the Cucumbers, that soil will be kept moderately warm, whilst the depth of the trench will prevent all danger of burning at the roots. These plants are as yet as robust, free-setting, and free-swelling as could be desired, and have needed no attention but the routine of air-giving, watering, disbudding, stopping, and setting. Here, however, "BEGINNER" tells us these little matters are just those that perplex him. Another correspondent tells us he has tried for years, and has plenty of insects, has plenty of labour, and numbers of small straggling shoots, and just a fruit worth looking at now and then; and "C." would have his cares lessened if helped to

decide whether he should plant only one plant in a light 6 feet by 4 feet, or more plants, as he manages fairly with one Cucumber in a light.

Beginning with the last, we would say that there need be no great care taken by an accomplished Melon-grower, whether he uses one plant or three plants to a light, but to all young beginners we would rather recommend three plants to a light, on the simple principle that in fruiting a Cucumber is very different from a Melon, inasmuch as you may easily have on the former fruit in all stages from blooming to being fit for table, and all the successions growing as well as you can wish them to do; but on a Melon plant whenever one or two Melons begin to swell freely, it is vain to hope that the numbers in a blooming state will ever advance much beyond it until the first fruits ripen. When one plant, therefore, covers a large space, it requires more skill and attention to have the requisite number of fruit set and beginning to swell at one and the same time. Hence, knowing this, when we have allowed a plant to occupy a large space, we have not unfrequently removed a promising fruit or two, because they were so much in advance of the rest, and would have prevented the rest making any progress. It is much easier to have two or four fruit started with equal strength on a plant, than six or a dozen. Hence, for the inexperienced, we recommend two or three plants to a light instead of one.

Like our second correspondent, we have not seldom had a number of shoots and small leaves when we could not overtake our work, or other causes prevented us treating the Melons in, after all, the easiest mode, and that which does them least injury. The mass of shoots is always present when the main runners are stopped prematurely, or there is the necessity for much pruning, which the Melon dislikes. Some time ago our coadjutor, Mr. Abbey, stated that we were the first to unfold a clear simple system of Melon culture, and which without any egotism we mention here, that beginners may see that there may be something in the simple plan recommended. The system is based on the facts that the Melon dislikes much lopping and cutting, that as many large healthy green leaves as can be exposed fully to light do more to insure good Melons than masses of smaller foliage, that the fruit sets best and swells best when there is strength in the plant to carry on the swelling before the fruit appears; and, finally, because, though with exceptions, still it is a general rule that Melons show fruitful flowers most freely on what may be called their tertiary shoots. Thus, supposing we call the stem that rises from the seed the primary shoot, the laterals that would come from the axils of the leaves would be the secondary shoots, and those that come again from the secondary shoots would be the tertiary or fruiting shoots. We will now meet the case of our second correspondent by shortly attending to the wishes of "BEGINNER."

To be as simple as possible, we advise potting the young Melon plants separately, say in 4 or 5-inch pots. As soon as the young shoot has grown two or three joints above the seed leaves nip out its point with the point of a knife. Merely for simplicity, we will suppose that you are to plant out three plants equidistant from each other, and that you are only to take two leaders or secondary shoots from each plant. From your topped plant then, as soon as you discover the best two little shoots coming from the stem, nip out cleanly all embryo shoots except these two; and as they grow train one shoot to the back and one to the front, and the more equal these shoots are in strength the better. As these shoots grow you will find that a third shoot will be coming from the axil of each leaf. Do not permit one of these to grow, but nip them out clean with the point of a knife, so as to make as little wound as possible, and continue this process until these secondary shoots are disbudded of tertiaries for 20 inches or so in length. All this time you have allowed the point of your leading secondary shoot to go on unstoppered; but as soon as beyond the disbudded part you can see from three to five joints, though close together, then nip off the point of the shoot, and that will cause the tertiary shoots to come strongly from the joints not disbudded, and most of these will show fruit at the first joint, and then be stopped at the joint above it. Sometimes the fruit will not show until the second joint, and sometimes not then, and in that case stopping must be resorted to all the same to prevent confusion; but in most cases the fruit will show at the first joint of the tertiary shoot; and there need be no difficulty in setting from two to four Melons on each plant according to size, and which when they swell freely will soon occupy all the energies of the plant. The setting and swelling are so much more cer-

tain, from the strength in the plant before the fruit is allowed to appear; and the disbudding, done more quickly than we can write a line, does away with a spray of useless shoots and the necessity of using the knife among them to give the large primary leaves justice.

In all crops, and especially early ones, it is desirable to assist the setting of the fruit by bringing the male and female flowers into contact with each other, and this is best done in sunshine. During the setting process the atmosphere of the place should be rather dry and airy, and this can hardly be the case unless the soil is dry on the surface. Unlike Cucumbers, Melons rather prefer never to have water poured over their foliage; if even the syringe is used, the moisture should be dissipated and the foliage dry before the sun beats on it strongly. The plants may be watered as wanted at the roots; but when, according to the above plan, we stop the point of the secondary shoots to encourage the free protrusion of the fruitful tertiary, it is well to give as much watering as will save watering again until the fruit be fairly set. If obliged to give it in an extreme case, it is well to supply it to the soil underneath without wetting the surface.

The only other peculiarity is to secure dryness on the surface of the soil as the fruit approaches maturity; but here, too, again by means of holes or drain-tiles set upright, you may give water beneath when you judge there is a need for moisture. This is often required when Melons are grown over hot-water pipes, or tanks, but of that we are not treating, but merely giving the simplest plan for a beginner trying his success over a rough dung bed. There need be no difficulty in effecting a creditable result, if a few minutes can be spared every day to look to the disbudding and stopping, especially before the fruit takes all the running.—R. F.

COVENT GARDEN MARKET.—APRIL 22.

The market is well attended, and there are large supplies, some articles continuing in excess, especially Cucumbers and Kidney Beans. Good samples of the former may be had for 12s. per dozen. The latter bring only a nominal price, those of out-door growth from France competing. Some good parcels of Green Peas are to hand and sell for 5s. per pint ready shelled.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples ½ sieve	3	0 to 5	0		
Apricots doz.	0	0	0		
Cherries lb.	0	0	0		
Chestnuts bnsh.	0	0	0		
Currants ½ sieve	0	0	0		
Black doz.	0	0	0		
Figs doz.	0	0	0		
Filberts lb.	1	0	0		
Cobs lb.	1	0	0		
Gooseberries quart	2	0	0		
Grapes, Hothouse. lb.	12	0	20	0	
Lemons 100	8	0	12	0	
Melons each	0	0	0 to 0		
Nectarines doz.	0	0	0		
Oranges 100	3	0	7	0	
Peaches doz.	0	0	0		
Pears (dessert) doz.	4	0	8	0	
Pine Apples lb.	8	0	10	0	
Plums ½ sieve	0	0	0		
Quinces doz.	0	0	0		
Raspberries lb.	0	0	0		
Strawberries per lb.	5	0	12	0	
Walnuts bush.	10	0	14	0	
do. per 100	1	0	2	0	

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes doz.	3	0 to 4	0		
Asparagus 100	4	0	10	0	
Beans, Kidney 100	1	6	0	0	
Beet, Red doz.	2	0	3	0	
Broccoli bundle	0	9	1	0	
Brns. Sprouts ½ sieve	0	0	0	0	
Cabbage doz.	1	0	1	6	
Carrots 100	0	0	0	0	
Capsicums doz.	0	6	0	8	
Carrots bunch	0	6	0	8	
Califlower doz.	2	0	5	0	
Celery bundle	1	6	2	0	
Cucumbers each	0	6	1	6	
Endive doz.	1	0	0	0	
Fennel bunch	0	3	0	0	
Garlic lb.	0	8	0	0	
Herbs bunch	0	3	0	0	
Horseradish bundle	2	6	4	0	
Leeks bunch	0	3	0 to 0		
Lettuce per score	1	0	1	6	
Mushrooms pottle	0	9	1	6	
Must. & Cress, punnet	0	2	0	0	
Onions per bushel	3	0	5	0	
Parsley per sieve	3	0	4	0	
Parsnips doz.	0	9	1	0	
Potatoes bushel	4	6	5	6	
Kidney do.	4	0	6	0	
Radishes doz. bunches	0	6	0	9	
Rhubarb bundle	0	4	1	0	
Savory doz.	0	0	0	0	
Sea-kale basket	0	9	1	6	
Shallots lb.	0	8	0	9	
Spinach bushel	2	0	3	0	
Tomatoes per doz.	0	0	0	0	
Turnips bunch	0	4	0	6	

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

BOOKS (S. A. W.).—Lindley's "Theory of Horticulture" is 21s., and obtainable from any bookseller. Johnson's "Science and Practice of Gardening" is 3s., and may be had free by post from our office if you enclose forty postage stamps.

MOVING MACHINE (S.).—We cannot recommend one more than another, for they all will work well if properly managed. The charge you incurred for repairing was certainly very large, but would have been avoided if you had written to the makers and stated what you required. The cost of carriage to any distance is heavy.

YOUNG GARDENERS AT CHISWICK (W. R.).—If you write to Mr. Barron, Royal Horticultural Society's Garden, Chiswick, he will give you the information you require.

SOIL MANURED WITH SALT (D. S. K.).—Having destroyed the slugs by the application of salt as you state, if the ground be then dug the seed or plants may be inserted immediately.

DRYING FLOWERS (Maude).—Very few retain their full colour when dried. To enable them to retain as much as possible, let them be placed between folds of blotting paper, pressed very gently, and the blotting paper changed for fresh every morning and evening.

RIBES SANGUINEUM (Bruno).—The flowers you enclosed are of far darker crimson than those of the species usually grown. We think it worth propagating, although it may be the sub-variety known as Ribes sanguineum atro-rubrum.

BLIGHT ON HONEYSUCKLES (Viator).—The best thing you could do with your Honeysuckles would be to dust the parts insect-infested with ground tobacco, placing it in a small pepper box, such as may be had of any ironmonger for a penny, having previously given the plant a thorough wetting with water, by which the sun-like ground tobacco will adhere to the shoots. This should be done on a calm evening, and the following evening a good syringing may be given with a solution of soft soap, 2 ozs. to a gallon of rain water. The oftener a plant is syringed in the evening with clear water the less likelihood there will be of insect attacks. It should be done in the evening. Keep the roots well watered and mulched.

CANTUA BUXIFOLIA (W. D. A.).—The sprig sent us is, we think, Cantua buxifolia. It is necessary that it have a position near the glass in a cool airy greenhouse, and be kept rather dry in winter, for it succeeds under the same treatment as Heath. The soil should be open and well drained. If encouraged with heat and moisture it grows too quickly, weak, and tall. No plant succeeds when it is starved. It needs encouragement in the shape of an abundance of air, light, and room.

VERONICA ANDERSONI VARIEGATA FOR BEDDING (A Subscriber).—It succeeds out of doors as a bedding plant, the cuttings being struck in early autumn, potted-off, and wintered in a house from which frost is excluded, keeping the shoots well pinched-back up to May, so as to have a dwarf, compact, bushy plant by planting-out time.

THOMSON'S STYPTIC FOR CUTTINGS (Idem).—By giving a touch of Thomson's styptic to the base of cuttings after they are prepared for insertion, their rooting is facilitated, especially in the case of softwooded plants likely to imbibe moisture considerably, as Pelargoniums, &c. The great art of striking cuttings is to take the growing points, cutting them transversely immediately below a joint, to afford them a slight increase of temperature to that employed for the old plant, to keep the soil uniformly moist, and the atmosphere close, moist, and the cuttings shaded from strong light; but the treatment varies considerably with the subject, so that no definite answer can be given to your query.

SEEDLING ANEMONES (A Constant Reader).—You should mark the best of the plants now they are in flower, and when the foliage fades take them up and replant in a bed by themselves. The others may be planted in any borders where you can find room for them. Do not allow another season to pass without taking up the plants, and affording them more room. You have in a bed of Anemones a charm which few in these days care to possess. Nothing is finer in its season, and it is a pity they are not more extensively cultivated.

IPOMEEA BEDDEREFOIA (A. C. M.).—This, the German Ivy plant, is a very good plant for the purpose you name—viz., that of a background for a tender basket, and all grounds where a speedy evergreen-growth is required. It very much resembles the small green-leaved Ivies, and has pale lilac flowers similar to a Convolvulus. Being of quick growth, and attaining a height of 10 feet, it soon spreads over much space, and should be frequently pinched to have it compact. The plant flowered in the Pine-Apple Place Nursery, Edgware Road, London, in 1859, against a south wall. It is but little known, but deserves to be more cultivated, as it will grow in almost any place where there is slight heat or safety from frost.

GRAFTING THE MALE ON THE FEMALE AUCUBA (E. B. Ryde).—Not having any experience in the grafting of Aucubas, we are unable to say whether it would be practicable to graft the male on the female Aucuba; but we think it likely. Your best mode of proceeding would be by inarching, now being a good time. The graft succeeding and flowering, it would impregnate the flowers of the female plant; but it would answer quite as well to place a male plant by the female as to graft them together, and the flowers can be easily fertilised artificially.

CHERRY TREE INFESTED WITH CATERPILLARS (Ignorant).—The best remedy is hand-picking; but the trees may have white hellebore powder dusted over them with a dredger, which will clear them; and a good syringing or two of a solution of soft soap, 2 ozs. to a gallon of water, will render the trees obnoxious to them. Sparrows have not in our experience interfered with the bloom buds of Gooseberry bushes, but they may occasionally do so, though it has not occurred to us. We have before heard it said they do, and in one such instance we found the bushes of a neighbour had been nearly stripped of their buds by a pair of bullfinches, which we saw on a neighbouring tree awaiting our absence to resume work. The mischief was attributed to the sparrows, but we believe them innocent; indeed, a pair of bullfinches will do more havoc in the way of stripping trees of their buds in a day than we have seen done by sparrows in twenty years. We never saw a chaffinch, or "spink," as you call it, peck at the bud of a fruit tree. We know of many things for poisoning birds, but we shall be of the last to recommend so suicidal a course to the gardener or farmer. We have not forgotten the fable of the farmer and the crow.

TACSONIA VAN-VOLKXEMI (An Inquirer).—We do not know a Passiflora Van-Volkxemi, and we think the plant you have received is Tacsonia Van-Volkxemi, which requires a greenhouse. It will not thrive if planted out of doors. Being a climber it should have a light and airy situation, and be trained near the glass. When growing water it freely, and in winter keep it dry.

PEAR BLOSSOM INJURED BY INSECTS (F. H.).—The specimen enclosed to us has been destroyed by some caterpillar, probably the red-bud caterpillar (Pyrallis luseana), which does considerable injury by preying on the buds. Dusting the trees when the caterpillar makes its appearance with fresh slaked lime is the only remedy.

MARIE LOUISE PEAR LEAVES AND BLOSSOM WRINKLED (A Pear Boy).—Your specimen has the appearance of being affected by the Pear-tree blight—a consequence of the sun's rays being hot and the nights cold.

The only remedy is to protect from frost at night, and shade the trees for a few hours during the day when the sun's rays are very bright and hot. A good syringing would do good.

FLOWER BED PLANTING (F. L.).—Your first mode of planting the bed we do not think would look well. We would have a centre of Coleus or Perilla, and fill the space all round with Lobelia to within 1 foot of the margin, and there have an edging of Cerastium, and in the midst of the Lobelia we would put out 18 inches apart good plants of Mrs. Pollock Pelargonium. The second proposed planting we do not approve of, as Lobelia has a poor appearance next grass, and we should, were this plan adopted, plant Variegated Alyssum along with the Lobelia, having a broad band of Lobelia with plants of Variegated Alyssum 18 inches apart. The third mode of planting would make a very effective bed, and one that could not well be improved on, only we would have in the centre a good specimen of Coleus or Perilla, then Mrs. Pollock Pelargonium, blue Lobelia, and the Cerastium for edging.

ROSE TREES INFESTED WITH GREEN FLY (Idem).—The best remedy is to syringe them well, and whilst wet dust them with ground tobacco.

REPORTING AND WATERING PELARGONIUMS AND FUCHSIAS (Idem).—If the plants are wanted for specimens they should be repotted as often as the roots reach the sides of the pots, and before they become very closely matted, still allowing them to become slightly so before repotting. This should be continued until the plants are shifted into their blooming pots. The dowering of the plants over the leaves every day with water will not be sufficient watering. When growing freely the plants will require a good watering every day in bright weather, and every alternate day in cloudy weather, such as you give them once a week. The watering is always sufficient if the leaves do not flag, but if they do so, too little moisture has been given. A good liquid manure for watering Pelargoniums and Fuchsias is half an ounce of guano dissolved in a gallon of water, and it may be given once a week so as to show itself at the drainage, and all waterings should do the same.

GINGER CULTURE (W.).—Ginger would succeed admirably in a Pine stove, and it will do well in an ordinary stove. A compost of rich rather light turfy loam, with the addition of one-third leaf mould, would grow it well. It should have a light and airy situation, and an abundant supply of moisture when it is in free growth. The soil should not be less than 15 or 18 inches in depth, and must be well drained. If bottom heat

can be afforded the Ginger will grow all the better. A moist atmosphere, so as to encourage free growth, is necessary. The best Ginger is that from roots a year old, they being taken up when the foliage withers, which will be in January or February. You would best succeed with it in the bed, as it cannot well be grown in a pot for its roots. If the roots do not attain sufficient size in one year they may be left until the second, but they are almost sure to become woody. To have good Ginger it should be grown quickly, and the finer the plants the finer will be the roots.

FUCHSIA SHOOTS DISEASED (A. G. P.).—We do not notice anything wrong with the Fuchsia shoots, except that the points are all dead. It may have been caused by syringing with some injurious compound, or it may be by mildew, of which, however, we notice no traces. We would pinch out the points of all the shoots, and start them afresh, and if mildew attack, dust the infested parts with flowers of sulphur.

SOLANUM CAPSICASTRUM CULTURE (Idem).—It is of very easy culture, requiring to be grown in a light and airy part of a greenhouse, and in a compost of two-thirds light loam, and one-third leaf mould. It is best grown in the form of a pyramid; it should have an abundance of water, and should not be overpotted. It is grown for its berries, which are attractive in winter.

CONTORTED RADISH (J. Burton).—The Radish you enclosed is very remarkable in its growth. It has grown itself into as perfect a knot as if it had been tied by hand. We never saw a similar instance.

VINE AND PEACH CULTURE (Staff Surgeon).—To some extent every one must be taught by dearly-bought experience. No book could be written to suit all soils, all seasons, and all other contingencies. The best aid we can recommend to you is "In-door Gardening." You can have it free by post from our office if you order it, enclosing twenty postage stamps with your address. Your Peach tree shed all its blossoms from want of water to the roots.

BIRDS & POLYANTHUSES (C. S. D.).—We have nothing we can add to what we said at page 282 under this heading.

GRAPES (J. T. C.).—Write to Messrs. Webber & Co., Central Avenue, Covent Garden Market.

NAMES OF PLANTS (W. F. R.).—Cyclamen persicum.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending April 21st.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 15	30.392	30.249	65	37	47	45	N.W.	.00	Hazy, fine; clear and fine; fine, starlight.
Thurs. 16	30.080	29.957	64	50	49	45	N.W.	.00	Overcast; densely overcast; fine, very mild.
Fri. ... 17	30.073	29.877	62	30	51	47	N.W.	.00	Overcast; fine; clear and very fine.
Sat. ... 18	29.798	29.470	57	43	50	48	N.W.	.00	Hazy and overcast; fine; fine at night.
Sun... 19	29.432	28.970	56	45	50	48	S.	.12	Overcast, cloudy; overcast; high wind; rain.
Mon... 20	29.416	28.964	60	45	51	48	S.W.	.24	Stormy; boisterous and showery; very boisterous.
Tues. ... 21	29.708	29.439	64	45	52	48	W.	.04	Overcast and boisterous; stormy; cloudy.
Mean	29.843	29.563	61.14	42.14	50.00	47.00	..	0.40	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GAME FOWLS.

As a great admirer and pretty successful breeder of Game fowls, I read with the deepest interest any article in your Journal respecting these beautiful and majestic birds, and I hope it may ere long be the means of laying a sure foundation for properly judging and exhibiting poultry upon the same system, and by one "standard of excellence," as many judges care for no standard but their own, whatever that may be, and which pretty frequently only becomes known to the cost of many exhibitors after it is too late. For example, let us suppose Game fanciers were to exhibit their pets where "NEWMARKET" was judge; the best birds in the kingdom would most certainly be returned unnoticed; *vide* his article in your Number of the 19th ult., headed "Game Fowls' Tails," in which the writer appears anxious to impress upon Game breeders the, to me, absurd idea, that it is the "most spirited attitude" of the Game cock "to carry his tail up and fanned," and have his wings "lowered and shielding his thighs," and those that carry their tails "low and folded," are generally of a "quiet and tame disposition." I have delayed giving my comments on these statements in the hope that some "English star of the first magnitude" would take up the "endgels" against "NEWMARKET." Yet, though no one has thought proper to do so, I feel confident that such assertions cannot have met with general approbation.

Cockers are a pretty numerous class in this quarter, and such a stamp of bird as "NEWMARKET" fancies, is quite unknown to them. I had also in my possession some two years since, the last of a splendid stamp of Game fowls brought from the south about ten years ago. These birds were too

feathery for the present fancy, had low pendant tails and wings firmly set in their sides, and for as many of this strain as found their way into the cocker's hands during the space of eight years, not one was known to flinch. My present stamp of birds is neither fanned-tailed nor low-winged, and some time ago on going round my pens I was horrified to find that two had broken out, and were both blind and so mangled that I had to put an end to their sufferings.

Not satisfied with the foregoing facts, I have, since the appearance of "NEWMARKET's" article, obtained the opinion of Mr. Brown, New Scone, Perth, a gentleman of long experience amongst Game fowls, who writes me as follows:—"I have just now four breeding cocks, Black Reds, exactly resembling the 'quiet disposition' as described by 'NEWMARKET.' Now, sir, one of my cocks is about two years old, and I beg to assure you I would not enter his pen to pick up the largest gold coin without a stick or other weapon of defence." So much for the 'tame disposition' of a Game cock with low and folded wings."

"NEWMARKET" further informs us that he looks "chiefly at the fighting qualities," and cares not for the awards at exhibitions, unless they are made by really "well-known Game judges." That is very good indeed, and the last extract suggests the necessity of asking "NEWMARKET" if he has ever seen an award given to a Game fowl or fowls with "crest-fanned tail and wings lowered shielding their thighs," by a "well-known Game judge?" If he has, would he kindly give the name, so that we may compare his opinion with those of less note?

One more question and I have done. Does "NEWMARKET" really mean to tell breeders of Game fowls that a bird with a crest-fanned tail and drooping wings is the bird of courage and endurance that all of us have hitherto believed the pure-bred Game fowl to be? I must, on the contrary, assert my unbelief that the "spirited attitude" he describes is a fighting

qualification at all, and I consider such a bird a "coward," utterly unfit for exhibition, and only in his proper place when being handled by the cook.—H. GOODALL, *Lion House, Kirkcaldy.*

As my name in "NEWMARKET'S" last article is brought forward as an authority on Game fowls, I must say that I have read his numerous articles with no little surprise, as they are evidently very erroneous.

First, "NEWMARKET" says that, "In awarding the cups at exhibitions, judges are too prone to give them to stags, or cockerels, and to pullets, instead of to full-grown birds, and at the last two Birmingham Exhibitions cups were given to stags at the last Show, and to pullets at the last Show but one, when there were full-grown birds of equal merit there exhibited; and in the opinion of the best judges the full-grown birds are more entitled to cups than any birds not full-grown." Then he goes on to say, "Game fowls, though numerous, were, perhaps, scarcely so good as usual at the last Birmingham Exhibition, as, if they had been, stags would not have won the cup, for when adult birds fail in getting cups it is, I think, usually a sign that the show of birds is scarcely 'up to the mark.'"

If "NEWMARKET" has studied the prize list of the last Birmingham Show (which he ought to have done before writing such an article as the above), he must have seen that the cups were especially offered "for the best stags;" cocks being altogether excluded from the cup competition.

"NEWMARKET" names colour of skin as of importance to distinguish the courage of birds. I can tell him that I have had it in all colours from white to black, none more so than in yellow skins and yellow and willow legs.

Again, why keep the dirty, smutty, dark red face if you can improve it with a beautiful pinky red?

"NEWMARKET" would also discard the grand yellow beak and legs of our Pile Game for a washy white. It is evident his own taste is very much circumscribed; to use his own words, "he cannot see any beauty in any fowl but Game."—CHALONER.

THE REARING OF SPRING CHICKENS.

As lovers of poultry are now engaged in rearing chickens, I venture to offer a few remarks on the treatment of the sitting hen and early-hatched chickens.

Breeders of fancy poultry should never breed from birds related to each other if it can possibly be avoided. Breeding from birds nearly related renders the offspring tender, smaller, and more liable to disease.

First, as to the treatment of the sitting hen; cut a nice smooth piece of turf, place it at the bottom of the nest, and add hay or short clean straw. Some persons prefer hay, as it lies closer; but whichever is used, never omit to dust the nest over well with flowers of sulphur. It prevents the hen being made restless by parasites.

The number of eggs to be placed under a hen must partly depend on her size, and also on the size of the eggs. The weather and situation must also be considered. Some writers on poultry consider thirteen sufficient, but I should never put less under a large hen. In cold seasons and situations nine are sufficient.

If the place where the hen sits is much frequented by other hens, it is as well to shut her in, and let her come out to feed every morning, as other hens will sometimes lay in the sitting hen's nest, and this should be avoided.

During the third week of incubation the eggs should be sprinkled with warm water occasionally. If the hen hatches a small brood it can be placed with another a little older by putting the newly-hatched chickens into a basket, and placing the hen with a brood rather older than her own. Shut them in together, and after an hour or two add the younger ones.

Feed the hen liberally, as she requires it after sitting. The chickens should from the first be fed with great regularity. Every two hours they will come with an appetite. It is of no use leaving food to be trampled and wasted. Give them only as much as they will clear up. They should never be neglected, for if they once sicken, they seldom go on well afterwards. Ground oats should be the staple food; this may be wetted with water or skimmed milk. Tail wheat is much relished, and rice boiled enough for each grain to separate when thrown into meal. Rice is poor food by itself, but prevents diarrhoea and makes a change. Wheat must be sparingly used, on account of its being hard. A little bread and milk,

or a slice or two of suet pudding, will make a variation in the bill of fare. A little chopped egg and breadcrumbs are good food for newly-hatched chickens, but they can do without the egg. Stimulants are not required by healthy birds. The drinking pans should be kept clean, and where there is a dairy milk is better for them than water.

Place boards in the coop at night and remove them in the morning, have them scrubbed and replaced at night, or substitute straw. Put the coop in a fresh place every day. Cold does not affect them so much as wet.

It is desirable to have birds that feather quickly. The critical time is when they are getting the breast and head feathers. This takes place at about the third or fourth week of their lives, and they must be attended to as much as at first. In fine weather a run with the hen during the middle of the day does not hurt them after the first fortnight, as she finds them many dainty morsels. They should be fed as early as possible in the morning, as they are early astir. Grass does not hurt them. I kept three broods in a five-acre meadow in the severe frosts in March; the water in their pans was often a solid lump of ice, and out of twenty-nine only one was rather sickly, and that is recovering. On a wet soil I find the earlier chickens are hatched the better.—L. B.

THIS SEASON'S HATCHING.

As our friend "NEMO" says it would be interesting if our poultry friends would give us their experience of this season's hatching. Mine is as follows:—

Date set.	No. & Sort.	No. hatched.	Date set.	No. & Sort.	No. hatched.
Jan. 30	11 Brahmas	4	March 11	10 Brahmas	10
Feb. 4	13 "	8		5 Cochins	4
	5 " 13 "	7		11 "	5
	25 " 15 "	7	" 11	4 Crève Cœurs	0
March 3	15 "	7	" 16	15 Brahmas	11
	10 "	7		10 "	3
" 5	5 Cochins	5	" 18	5 Cochins	3
" 10	15 Brahmas	11	" 21	15 Brahmas	13
" 10	15 "	11	" 21	15 "	12
" 10	15 Crève Cœurs	13	" 23	9 Crève Cœurs	9
				6 Cochins	3

—PHILIP CROWLEY, *Culverton House, Alton.*

WHARFEDALE POULTRY SHOW.

THE annual Exhibition of the venerable Wharfedale Agricultural Society, for it is more than seventy years old, took place under most favourable auspices at Otley, on the 17th inst. There was a visible increase in the entries for poultry, notwithstanding the many disadvantages of an April Show. Game mustered in good force, while *Hamburghs* kept their own against all comers. In the latter extensive class Mr. Beldon, of Bingley, took the first prize in all five divisions. *Spanish* carried away the cup for the best pen in the Show. The larger kinds of fowl seem to find little favour or encouragement at this Show, for while the entry for *Dorkings* was very meagre, *Brahmas*, *Cochins*, and the *French* kinds had to creep in the "Any variety" class. The day was beautifully fine, and the attendance of visitors unusually large. Subjoined are the awards:—

SPANISH.—First and Cup for best pen in Show, H. Beldon, Goitstock, Bingley. Second, J. Thresh, Bradford.

DORKINGS.—First, J. White, Northallerton. Second, T. E. Kell, Wetherby.

POLANDS.—First, H. Beldon. Second, W. Shaw, Boroughbridge.

GAME (Red).—First and Cup for best pen of Game, E. Aykroyd, Bradford. Second, E. Allen, Baildon, Leeds.

GAME (Greys or Blues).—First, C. Travis, Thurgoland, near Sheffield. Second, D. Ashworth, Halifax.

GAME (Any other variety).—First, R. Turner, Drighlington, Leeds. Second, A. D. Edwards, Huddersfield.

HAMBURGHS (Golden-spangled).—First and Second, H. Beldon.

HAMBURGHS (Silver-spangled).—First and Second, H. Beldon.

HAMBURGH (Golden-pencilled).—First, H. Beldon. Second, F. Lees, Guiseley.

HAMBURGHS (Silver-pencilled).—First and Second, H. Beldon.

HAMBURGHS (Black).—First, H. Beldon. Second, C. Sigdwick, Keighley.

GAME BANTAMS.—First, Moody, Habbshaw, & Stead, Otley. Second, W. Edmondson, Denton.

BANTAMS (Black).—First, H. Beldon. Second, S. & R. Ashton, Mottram.

BANTAMS (White).—First, H. Beldon. Second, A. B. Peirse, Bedale Hall.

BANTAMS (Any other variety).—First, T. Nettleton, Knaresbro'. Second, J. Walker, Halifax.

ANY OTHER VARIETY.—First, C. Haworth, Haslingden. Second, H. Beldon.

DUCKS (Rouen).—First, J. Dixon, North Park, Bradford. Second, J. White, Netherthorn, near Wakefield.

DUCKS (Aylesbury).—First, J. T. Robinson, Thirsk. Second, Miss Rawson, Yeading.

DUCKS (Any other variety).—First and Second, J. Dixon.

TURKEYS.—First, Mrs. A. Fawkes, Farnley, near Otley. Second, T. Pearson, Swinsty Park.

PIGEONS.

TUMBLERS.—First and Second, H. Beldon.
FANTAILS.—Prize, D. Townsley, Bradford.
POUTERS.—Prize, W. C. Dawson, Otley.
BARRS.—Prize, T. L. Richie, Otley.
OWLS.—Prize, W. C. Dawson, Otley.
CARRIERS.—Prize, W. Shaw, Boroughbridge.
TURBITS.—Prize, W. Lund, Shipley.
JACOBINS.—Prize, W. C. Dawson, Otley.
ANY OTHER VARIETY.—Prize, W. C. Dawson.

Mr. W. Smith, Halifax, and Mr. T. Dodds, Wakefield, officiated as Judges.

LIZARD CANARIES.

I RETURN thanks to Mr. Howarth Ashton for answering my questions respecting Lizard Canaries, and from the experience he has had with all varieties of Canaries his opinion ought to be respected. There is one point, however, that I do not exactly understand. Mr. Ashton states that the cap is the principal point of a Lizard, and that a bird with an imperfect cap ought at once to be disqualified, no matter how good it may be in other respects. I cannot see the justice of the last sentence, as, if I interpret the meaning correctly, a bird with a slightly imperfect cap, though rich in quality, would stand very little chance of success against a perfect-capped bird of inferior quality in other respects. This would seem to place the spangles in no place whatever. Most judges appreciate quality as well as plumage and condition. I have frequently seen quality sacrificed to size—a failing no judge should give way to.—R. HAWMAN.

[We forwarded the above letter to Mr. Howarth Ashton, and he has obliged us with the following reply:—

"I consider a Lizard is no Lizard unless he has a cap differing in colour from the rest of his body. A bird with spangles and a little different colour on his head might be any cross-bred thing. As in Houdan fowls, which are disqualified if shown without a crest, so Lizards ought, in my opinion, to be disqualified if they have no cap; and I say a bird with a bit of a cap has in show rules no cap at all."]

ARE HYBRID CANARIES FRUITFUL?

CAN you inform me whether mules bred from a hen Canary and Goldfinch are fruitful—either a cock Canary and hen mule, or a cock mule and hen Canary? The author of the article on the Canary in Knight's "Penny Cyclopædia" makes Bechstein say that the grey of its primitive colour has undergone many changes from domestication, climate, and from union with birds analogous to it. In Italy with the Citril Finch, the Serin; in Germany with the Linnet, the Greenfinch, the Siskin, and the Goldfinch; so that now we have Canaries of all colours. Speaking of mules he says, "Before we conclude our notice of the hybrids we must again refer to the alleged fruitfulness of some of the mules, such as those of Serins, Citril Finches, and Goldfinches. The first eggs of these hybrids are said to be very small, and the young hatched from them very weak. The eggs of the next year are said to be larger, and the nestlings stouter and stronger."

A friend to whom I showed the above has put up a cock mule and hen Canary, and she is now sitting on four eggs. Some breeders that I have asked declare they have had young from such unions, others that the eggs are always unhatched.—G. SURTON.

[We enclosed the preceding to Mr. Blackston, and this is his commentary:—"If your correspondent will wait a few days he will have an opportunity of judging for himself in the matter on which he seeks for information, as his friend's hen Canary is sitting on four eggs to a cock mule. An instance of fertility in such eggs has never come under my observation; and as I apprehend that an actual case is what is inquired for, mere hearsay will be of no value. Bechstein himself only affirms that the eggs of these hybrids are said to be small, &c."

"A friend, an article from whose able pen sometimes enriches your columns, writes me this morning, 'I have seen a mule bred from a Greenfinch mule—i.e., from a bird which was the offspring of a Canary cock and Greenfinch hen, and think that Goldfinch mules will breed with the parent stock, but not between themselves; and I fancy the reason why birds bred this way are so seldom seen, is because after the first year's attempt, when the eggs are generally unfruitful, breeders

give up in despair. I entirely scout the idea of our different breeds of Canaries arising from crosses with the Goldfinch, Greenfinch, Citril Finch, Serin Finch, &c. Look at our Pigeons—are not they even more different in form and colour? and they must all have come from one kind of Dove.'"]

PAINTING STRAW BEE HIVES.

IN the books which I have read, I find very contradictory statements concerning this practice, some people affirming that it is a very good thing to do, others asserting quite the contrary; I wish, therefore, to know the opinion of yourselves about it. In my own opinion, I think there can be no harm done if the hive is painted some time before being used, and there is no doubt that it lasts much longer when painted.—CAROLUS.

[We believe painting the exterior of bee hives to be prejudicial to the well-being of their inhabitants, by confining the moisture which so frequently condenses in the hive's interior. We once shifted a stock of bees in the spring from a painted wooden box 1½ inch thick, which when weighed showed an increase of about 2 lbs. from the moisture which it had imbibed, and when the paint was planed off, the wood immediately underneath was found to be as completely saturated as if it had remained twelve months under water.]

UTILISING AND UNITING CONDEMNED BEES.

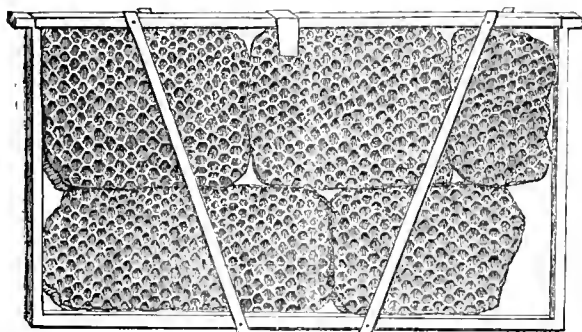
(Concluded from page 122.)

OUT-DOOR operations being thus satisfactorily completed, attention must be given to the deserted hives which have been conveyed in-doors, and from which the combs should now be removed. I find that nearly all bee-keepers are obliged to the skilled operator who will spare them the trouble of cutting out the combs, and who, by the aid of his honey knives and the exercise of a little tact, will extract them in an un mutilated condition. Getting the previously empty bucket half-filled with water, and placing it by my side for the convenience of occasionally clearing my hands and knives from the honey with which they from time to time become clogged, I set to work, and if there are no cross sticks, have little difficulty in cutting out the combs, and piling them handsomely on dishes. If there are no cross sticks! Ay, there's the rub! It's all very well when they project through the sides of the hive, so that they can be laid hold of, twisted round, and pulled out by means of a pair of pincers; but our Devonshire cottagers have, or rather had—for I have objugated and reasoned with them until I have cured most bee-keepers in my own immediate locality of the horrid practice—a plan of fixing two cross sticks in the interior of each hive, and as they were made of hard wood, pointed at the ends, and stout in the middle, and were inserted from the inside, it was impossible either to sever or to extract them. People may talk, but little things do try the temper, and I am free to confess that I have often growled most savagely, and become as cross as the two sticks themselves, when I have met with these almost insurmountable obstructions.

Supposing, however, all difficulties to be overcome and the combs fairly extracted, I next endeavour to make a bargain for what the country people hereabouts call the "deaf" comb—i.e., those portions of the combs which are either nearly empty or contain only brood or pollen with but little honey. These are generally freely presented to the operator by well-to-do farmers and others of the more respectable classes, who are but too glad of the opportunity of offering some little compensation to any one who has taken the trouble of performing what to them would have been an unpalatable task, whilst cottagers are willing enough to part with them for a moderate compensation. Unfolding, then, one of my newspapers and laying on it the piece of half-inch wood as a foundation, I proceed to detach every bit of "deaf" worker-comb, and worker-comb only, taking care to cut out each piece in as nearly a rectangular form as possible, and pile it up on the newspaper, by means of which I ultimately make it into a parcel and tie it up with one of the pieces of string. A little ingenuity suffices to pack and secure bees, combs, bag, and baggage on the platform of the little trap, and a pleasant walk homewards in the cool of the evening concludes the labours of the day. Arrived home, the hives are placed on the fl or with a block under one side of each, to insure ventilation, whilst the parcel

of combs is consigned to the kitchen to prevent its becoming chilled during the night.

The morning after a bee-driving expedition is usually a busy one, and I find my ingenuity pretty well taxed in matching together and fitting into frames, from the bars of which the projecting Woodbury rib has been removed, and their under surface coated with melted wax, the pieces of "deaf" comb. These are temporarily secured in their places by means of a couple of strips of wood, one-sixteenth of an inch thick by three-eighths wide, tacked on either side, and one or more zinc clips applied at the top in a manner which will be readily understood by reference to the annexed engraving. When patching pieces of



comb together in this way I find it necessary to pare down any parts that are of unusual thickness, and at the same time to take care that the cells on either side are left of equal length, also that the "partition wall" is not only in the centre of each bar, but that this part of every piece of comb is brought fairly and correctly in line with the "partition walls" of every other piece with which it comes in contact, and to which it is intended ultimately to be united. Crooked combs have to be set straight, and if not at first sufficiently pliable to permit of this being readily done, are rendered so by being slightly warmed before the fire.

Having if possible provided in this way at least six combs for every new stock which I am about to form, I place them in the centre of a hive from which the crown-board has been removed, and deepen this at the top by the addition of another of the same size, but destitute of either frames, or crown or floor-boards. Conveying the whole to the stand which the new colony is to occupy, I untie a hive into which the inhabitants of two stocks have been driven, and knock out the cluster of bees into the upper hive on the top of the frames of the lower one, putting on the crown-board immediately before the dislodged cluster has time to spread and scale the sides of the hive. The imprisoned queen, with her companions in captivity, remains, of course, incarcerated in the perforated box, where they are supplied with a little barleysugar, and are kept in a genial temperature on the kitchen mantelpiece for a day or two until the safety of the queen regnant has been demonstrated. The inserted hive is taken away the next morning, and the day following the combs are lifted out, the safety or loss of the queen ascertained, and the supports removed from all the combs which are then found to be fixed, but if any are not secure they are left for the present. If the queen be really missing, which, however, is but seldom the case, her place is at once supplied by her imprisoned rival; after which nothing remains to be done but to administer a sufficient supply of food, which consists of lump sugar and water in the proportion of three parts (by weight) of the former to two of the latter, mixed and boiled a minute or two. This is given at the top by means of an inverted pickle bottle, which is filled every evening until the stock reaches at least 16 lbs. nett weight, irrespective of the hive. When this is attained, any artificial supports which may yet encumber the combs are at once removed, and the whole made snug for the winter.

When driven bees are merely intended to strengthen stocks already domiciled in frame hives, there is no necessity for seeking for and imprisoning their queen, as it is so much easier to remove the sovereign of the frame hive by lifting out and examining the combs until she is perceived and captured, when she should be imprisoned with a few of her workers, and kept alive as before recommended until the fate of her successor be ascertained. Her capture having been effected, the combs are restored to their places, and the bees should then

be driven upwards through the bars into the same hive with the previously-driven bees. "What!" I can fancy some of my readers exclaiming, "drive bees upwards through the bars of a square frame hive into a round common one! and pray how do you close the openings at the four angles so as to prevent their escaping?" To this I would simply reply that I do not close them at all, it being unnecessary to do so, as the majority of the bees will rapidly ascend into the upper hive without attempting to escape, whilst any that take wing will speedily re-enter at the hive's mouth. As soon as most of the bees have ascended, the frame hive should be surmounted by an empty one, and the conjoined cluster of bees be knocked out on the bars of the lower one in the manner before described.

This, then, is the most recent mode which I have devised of effecting autumnal unions, and although I am far from flattering myself that I have succeeded in entirely obviating all risk of a quarrel, I can recommend it to the apiarian readers of "our Journal" as by far the most satisfactory of the many plans which have been tested by—A DEVONSHIRE BEE-KEEPER.

EARLY SWARMS OF THE COMMON BEE.—A cottager of Llan-rinio, Montgomeryshire, up to the 11th inst. has had two swarms. They are from the large, old-fashioned straw hive.—J. C. D.

OUR LETTER BOX.

MARKING CHICKENS (N. E. H.).—The easiest way to mark a chicken, taking it for granted an external mark is not required, is to perforate the web of the wing with a hot iron, or to mark it with worsted tied through it. The first is unseen, indelible, and almost painless. We have used it for years.

MARKING CHICKENS AND DUCKLINGS (B. E. H.).—You will find in the preceding answer our method for marking chickens. The same course may be adopted for Ducks, substituting the web of the foot for the web of the wing, or they may be safely and efficaciously marked by notches cut in the side of the bill when the birds are young.

COCHIN-CHINA CHICKENS DYING IN THE EGGS (Subscriber from Beginning).—The chickens die in the shell owing to the eggs being kept too dry. The inner membrane becomes as tough and dry as indiarubber, and the chickens cannot penetrate it. Those that do, come into the world exhausted. It is a natural and beautiful provision, that as the period of hatching draws nigh the shell used by the three-weeks sitting becomes thinner, allowing the heat to pass more readily to the impatient embryo, and making egress easier. As a rule, the Cochin egg, like all the dark ones, has a thick shell.

SPANISH COCKEREL'S COMB DROOPING—DORKING HENS ROUPY (Young Bristol).—We are very glad you are more successful than many of our correspondents in hatching chickens. We have several letters, alike cheering, that seem to be provoked by our remarks. We have small hope of the comb of your Spanish cockerel. It is the unusual development that causes it to fall over, and we know no system that will raise it up. Training can only be resorted to after growth has ceased. You must give your Dorking hens plenty of bread and ale, and some camphor pills. It is, probably, only cold from rain and frosty nights.

ROUP (B. E.).—You do not mention the breed of your fowls. Dorkings will not bear confinement, almost any other should bear that you mention. Lime whitening is most effectual. Now that the nights are becoming shorter and warmer shut up the house if there is any other place where they can roost. Disinfect the house with chloride of lime, have the floor picked up and re-made, mixing lime with the earth. Have all the perches thoroughly scrubbed with scalding water, and let the house be unoccupied for some weeks. When you get any fresh birds treat them daily for a few days with a pill of camphor the size of a pea.

DUCKS' EGGS UNFERTILE (C. P.).—It is common for Drakes to be accidentally disabled. It was, doubtless, the case with yours. That has nothing to do with the number of eggs the Ducks lay. Either their eggs are not found, or else they are taken by rats or some other depredators.

SILK FOWLS (J. D.).—Silkies are not large eaters. They like green food and frequent change. They want no different treatment from other fowls. All fowls want fresh air, especially at this time of the year.

BARNDOON FOWLS (J. Hall).—Any higgler in the counties you mention would supply you; or advertise for the large number you need.

BOILED JERUSALEM ARTICHOKE (Z.).—They are as good as boiled potatoes for fowls, and might be mixed with ground oats or ground barley. You will have seen that one or two correspondents, and they are practical men, approve of buckwheat as food for fowls. It is not much cultivated in this country.

HENS EATING THEIR EGGS (Chemicus).—There is no better mode of curing them of this habit than that you propose—namely, having none but artificial eggs left in the nests, and taking away the newly-laid eggs as quickly as possible.

EPITAPH ON A DUCK (G. A. S.).—We are obliged by your warning, but we did not promise a corner permanently, and must not admit any more verses for months to come.

ALMOND TUMBLERS (A Constant Reader).—We cannot inform you. You had better advertise for what you require, and see any birds offered before you buy them.

STEWARTON HIVE (W. F. T.).—We do not know who makes this hive now at Stewarton. If there is a maker there he should advertise.

WEEKLY CALENDAR.

Day of Month	Day of Week.	APRIL 30—MAY 6, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year
			Day.	Night.	Mean.		m.	h.		m.	h.				
30	Th	Meeting of Royal Society.	61.0	39.0	50.0	16	35	af 4	20	af 11	44	af 1	8	2 57	121
1	F		61.2	39.5	50.4	16	33	4	22	7	0	1 22	9	3 4	122
2	S	PRINCESS OF HESSE BORN, 1843.	62.5	39.2	50.8	15	31	4	24	7	16	2 53	2	10	123
3	SUN	3 SUNDAY AFTER EASTER.	61.7	39.9	50.8	20	29	4	25	7	29	3 20	3	11	124
4	M	Meeting of Entomological Society.	62.2	38.4	50.3	16	28	4	26	7	44	4 46	3	12	125
5	Tu	Royal Horticultural Society, Fruit, Floral	62.6	38.9	50.7	22	26	4	27	7	58	5 12	4	13	126
6	W	[and General Meeting.]	62.0	38.6	50.3	16	25	4	29	7	9	7 41	4	14	127

From observations taken near London during the last forty-one years, the average day temperature of the week is 61.9; and its night temperature 39.1°. The greatest heat was 84°, on the 6th, 1862; and the lowest cold 20°, on the 2nd, 1865. The greatest fall of rain was 1.26 inch.

MUSA CAVENDISHII CULTIVATION.

IF prolific fruit-bearing were the test of merit in a plant there would be no question as to this being the king of fruits, whilst in stateliness of growth it admits few superiors, although its brother *M. sapientum* is taller, and *M. sapientum vitata* has a coat of more than one colour, but the garb of *Musa Cavendishii* is of the "purple." In point of size and quality of fruit the plant exceeds all its relations, giving an immense weight of fruit in a short time, more so than any other plant with which I am acquainted.

Musa Cavendishii cannot be called a plant suited to both peer and peasant, for it is solely aristocratic. It will not thrive in a cool greenhouse; it is hopeless to strive to grow it on a window shelf, or to coax it in a frame in a warm sheltered corner. If it is not in every garden, it is in many where it cannot well be grown. I have seen it in a greenhouse, in a vinery, and in many houses that, were all the plants removed, would not afford space for the growth of a good specimen. I may be told it has been grown in a vinery, and fruited in a greenhouse. I know this. I have seen it done—have done it myself; but it does not follow because the celebrated Mr. Knight grew *Pine Apples* in a house without bottom heat, and because they have been fruited in the open air, that that is the most successful practice. It is not a proof of the mode of cultivation being good, but of the plant's endurance of cold. Although the *Musa* is annually bedded-out at Battersea Park, there cannot be any hope of so cultivating it as a fruit, and it is as a fruit that I now propose to treat of *Musa Cavendishii*.

To grow well it requires a light airy house, which should not be less than 10 feet in height, and need not exceed 12 feet. The roof should not be shaded by climbers, and the plant ought to have plenty of room laterally for its magnificent foliage, not cramping it, nor placing it so near the paths that the leaves are in danger of being broken at the ends or otherwise damaged.

Presuming the grower now to have a young plant or sucker well rooted in a small pot, shift it at once into an 11-inch pot, draining the pot well, and using a compost of turf from an old pasture, where the soil is a moderately strong, yellow loam, pared off 1½ or 2 inches thick, and chopped into pieces 1 or 2 inches square; to this may be added one-third of leaf mould. Pot rather lightly, though making the soil compact, give a gentle watering at once, and plunge in a bottom heat of from 75° to 80°. Be rather sparing of water until the plant begins to grow well, then water freely, keeping the atmosphere moist by frequently sprinkling the paths, walls, and every available surface with water of the same temperature as the house. The temperature may be that of a stove, or between 65° and 70° at night, 75° on dull days, from 80° to 85° on cloudy days but with clear intervals, and from 85° to 90°, or more, with sun and an abundance of air.

In six weeks the plant will be a fine one, and should be potted forthwith in its fruiting pot or tub, and if it is to be

grown without bottom heat, then by degrees withdraw the pot from the hotbed, but affording bottom heat is the best mode of growing all our more choice tropical fruits. The compost for the fruiting pot or tub should be slightly different from that previously employed, but turf must form two-thirds of the soil, and the remaining third may be a mixture of lumps of charcoal from the size of a hen's egg to that of a hazel nut, crushed bones, pieces of grit or sandstone of all shapes from the size of a marble to that of a cricket ball, and fresh horse droppings. If these materials are all brought under cover a month before they are wanted, and thrown in a heap they can be turned over, chopped, and otherwise well mixed. The pot must be large, 3 feet in diameter at top is not too large, and it may be 2 feet 6 inches deep, but the width is a far greater consideration than the depth.

Drain the pot well, making the holes larger if small, and if a tub be used bore at least three 2-inch holes in the bottom. To make sure of the drainage acting, invert over each hole a perforated flower pot—a shallow one, such as is sometimes used for growing Orchids, and fill to about an inch above these pots with rough charcoal, bruised bones, and lumps of grit, and then put in about 3 inches of the roughest parts of the compost. Place the plant in the centre, and fill round the ball with the compost chopped roughly, pressing it lightly. Give a good watering, and if there are evaporating troughs, fill them, and keep them full until October, with guano water made by dissolving 1 lb. in 20 gallons of water, and sprinkle the floors twice a-day with the same liquid, and the walls and other surfaces with water at least as often. Do not water very freely for a few days, but when the plant is growing finely, and showing how well it likes liberal treatment, give it a 3-gallon watering canful of water every day, except on two days in the week, when, instead of water only, let it have 3 gallons of liquid manure, either the same as that used in the evaporating troughs, which feeds the plant by its leaves, and stifles all insects that are fond of the shelter which the foliage affords, or one formed by pouring 30 gallons of water over a peck of sheep's droppings and afterwards stirring well. This watering should be continued until the last week in September, or it may be longer, just as the plant keeps on growing; but when the temperature falls then the plant will grow less, and must have less water and less moisture.

This prince of the tropics is a great eater as well as drinker, and surface-dressings are indispensable. Give a coating an inch thick all over the surface of the soil and to the rim, dishing it there so as to hold water, using for this purpose fresh cow dung. The first of these dressings may be afforded a month after potting, and the dressing may be repeated every month, until the supply of water is diminished. If the roots come through sooner, give the top-dressing oftener.

As to air, *Musa Cavendishii* likes an abundance, but avoid a cool dry atmosphere. Open the lights early in the morning, and admit the sun's rays, and shut up early, so as to take advantage of the heat thus obtained before the sun has begun to sink low, or in clear days about 4 P.M.

and an hour or more earlier when the sky is cloudy. The plant, like all others, is benefited by a little air at night, but this must not lower the temperature early in the morning; the mercury must rise as the sun ascends, sink as he sinks. That is the principle of air-giving, and when this comes to be better attended to we shall have less trouble with insects.

In respect to temperature, nothing is better than that I have already stated as suitable for the young plant, only I may repeat that for the plant to grow well the pot or tub should be plunged in a bottom heat equal to the mean atmospheric temperature of the house, and the roots should not be exposed, though protected by a pot or tub, to a fluctuating heat.

By the end of September the plant will be a strong one, if all has gone on well; the watering should then be gradually decreased, and the atmospheric moisture considerably so, to induce a state of rest; but if the plant continue growing do not be in too great a hurry, but let it grow on, bearing in mind that as the days are shortening and the sun heat is less, there will not be so great a necessity for moisture and heat as when the sun heat is greater. When the plant has ceased to grow, if kept dry at the roots for a fortnight, preserving at the same time a dry atmosphere, it may throw up its flower spike. This being the case, the temperature should not be allowed to fall lower than 60° at night, and should be kept as near 65° as possible. The watering should be moderate, and the atmospheric moisture the same, until the first row of fruit is about half developed, when the watering should be liberal. Give also a top-dressing of fresh cow dung as before, and maintain a moist atmosphere; but the season being so far advanced the watering and atmospheric moisture must be regulated in accordance with the weather. The temperature, however, should be 60° or 65° at night, and from 75° to 80° by day. The fruit will be ripe in March, and it will not be nearly so fine as if the plant had had a rest before it showed fruit. The bunch of fruit, together with the barren end, may weigh 30 lbs.—not a bad return for a plant twelve months old, and it will be a valuable addition to the dessert at that season.

To have fine fruit, the plant after September should be moderately supplied with water, merely giving enough, after the watering has been reduced to a minimum, to prevent the foliage from drooping. Sprinkling the floors of the house, walls, &c., once a-day, will afford sufficient atmospheric moisture, but even this will not be necessary in dull days. A temperature of 60° at night, or not less than 55°, is ample, and from 60° to 70°, with a rise from sun heat, will be sufficient by day.

Early in January any of the surface soil which will come away easily may be removed, and a good top-dressing of fresh cow dung given, and in a fortnight the temperature may be increased till it is 65° at night by the beginning of February, increasing also the supply of water, but not giving it in any great quantities until the plant is fairly growing; then be liberal with the watering pot, and maintain a good amount of moisture in the house, but avoid having so much as to affect the safety of the fruit, which is easily destroyed by moisture condensed on the glass falling on the leaves, and finding its way into the heart of the plant. Water, atmospheric moisture, and heat should steadily increase with the plant's increase in growth and with the greater length of the days. The plant will soon show its flower spike, and it should then have a rather drier atmosphere until the first row of fruit is partly developed; afterwards water freely and afford plenty of heat and moisture. Continue this treatment until the fruit begins to ripen, then afford a drier atmosphere and a brisk heat, with plenty of air at night. The watering at the root should be diminished, giving no more water than enough to keep the foliage from flagging; but this dry treatment should not commence until after the fruit has ceased to swell. Some cut off the barren end to assist swelling; I do not practise this.

With respect to suckers, if any appear break them off close to the soil, and drill out their hearts with a sharp wedge-like piece of wood; any coming after the fruit is developed may be left, and after the fruit is cut should be removed and potted, pulling up the old plant. If there are no suckers when the fruit is cut leave the old plant a short time; it will then produce plenty of suckers, and when a few inches high they may be potted and grown in the same manner as the old plant.

I have purposely avoided mentioning syringing, for it has been the cause of my losing some fine heads of fruit. Better not syringe at all than do that, though a good syringing every evening when the plant is in its young state, and until it ceases growth, is of great benefit. Syringe in the evening only,

for if practised in the morning the sun's rays striking upon the foliage whilst wet cause serious disfigurement. Do not syringe at all after the plant shows itself thick in the centre. —G. ABBEY.

FORCING LILIES OF THE VALLEY.

I READ with interest the article in page 293, on the Lily of the Valley, and it has led me to state the method I have practised for producing a good supply from January until the plant flowers out of doors.

I would follow the culture given in page 293, and when roots have been planted three or four years, as described, they are fit for forcing. When wanted for cut flowers it is a good plan to force them in boxes, which should be about 8 inches deep, but may be of any convenient length and width. I have found the most useful size to be 1 foot 8 inches long, by 1 foot 2 inches wide. A little rough material should be placed on the bottom of each box to act as drainage, and the boxes being taken to the Lily-of-the-Valley border, with a spade cut patches that will just fit inside the boxes. Two men will lift a patch easily with a spade at each end, and put it into the box. This being done, a little rich soil should be shaken over the surface, and into any crevices which may exist at the sides of the box.

When a large supply is wanted early, it is desirable to have a quantity taken up before frost becomes severe. The roots may be placed in any shed, one box above the other, providing the crowns of the roots are not above the box. One or more boxfuls may be placed weekly in a Peach house, vinery, or on the floor of the stove. The plants seem to suit themselves to any place where they have a temperature of about 60°. A little liquid manure assists them greatly, and increases the size of the spikes.

After the flowers are gathered the plants should be gradually inured to stand in a frame or any place where protection can be given; and when all danger of frost is past they may be again planted out on a well-prepared border in entire patches, and in two years they will again be fit for forcing. When wanted for pots or vases the same practice should be followed.

—W. OSBORNE, *Fota Gardens*.

A CHAT ABOUT MY GARDEN.

SOMETIME ago, on my writing you a letter about "Fern Habits," you asked me to write again. In that letter I stated how my Ferns seeded themselves on petrified moss in a Wardenian case. They soon became too large for that case, and I have now a little Fern house in a north-east corner, where the whole of the rockwork is composed of the petrified moss; and on the side where there is water it is already fast becoming covered with the germs of the Ferns and Lichen. Possibly any porous stone would be the same, but the petrified moss has the advantage of being much lighter and more porous than any stone that I ever saw.

You encourage private people with small gardens to write about their spring flowers, and as our soil is a deep red clay, it may be an encouragement to some under similar circumstances to know that we have every bed as full now as in summer.

The soil in the flower beds is, of course, "made soil," but in spite of this many spring flowers will not succeed, particularly Anemones.

I have a chain border on grass, the chain part being a narrow gravel walk, each link surrounding a round bed 5 feet in width, and a straight edging of tile round the whole leaves little three-cornered beds between each circle. These three-cornered beds are filled with Crocuses, which are now, of course, over, but each round bed is gay. They all have a clump of Tulips or Hyacinths in the centre, surrounded by borders of white Arabis, blue Forget-me-not, yellow Alyssum, and purple Arabis, alternately; the Tulips planted according to the border colour, red with the white and yellow borders; white and yellow Tulips with purple borders; and pink with blue. Another set of beds of the same shape has the whole of each bed of the Forget-me-not, purple and white Arabis, and yellow Alyssum, with the little three-cornered beds of Cerastium clipped closely.

All this is done at very little cost, as the Tulips are very cheap, and though they must be moved before the leaves are quite dead to make way for the summer bedding plants, I find most of them do again with a few fresh ones added each year to keep up the stock.

The yellow Alyssum is cut up into cuttings in June, and

planted in a small space in the kitchen garden, where the plants give no further trouble till wanted in November.

The Arabis and Forget-me-not are laid in as they are on a piece of waste ground, and they divide into any number of tufts when required.

Of course, we have other spring flowers in mixed borders, but for bedding we find those I have mentioned give as good a mass of colour as a greater variety, and are more easily managed where the beds are required to be quite empty for the bedding plants in summer, and they never fail from the cold of our subsoil, whatever the weather may be.—E. B.

NEPETAS.

It may be useful to correspondents who are making inquiries about Nepetas, if I state my experience.

Nepeta nepetella is very dwarf and useful for an edging, but it would be a mistake to say it is blue or anything near blue, at the same time it is scarcely red. We have found it very unsatisfactory as regards continuance of bloom, frequently causing a deficiency in ribbons before the season is over.

N. tenacifolia is a strong grower and very coarse, also not blue, I should say puce, but it does not continue long in bloom. I must at the same time remark, that soil makes a great difference in this class of plants, both in height and colour.

The Nepeta we have found most useful is Nepeta carulea. It grows 15 inches high, is a good blue at first, and only changes a little to lavender by the end of the season, but from May it is a continuous bloomer. It is easily propagated by dividing the roots, and is easily managed; but it should be borne in mind, that although these plants are hardy and perennial, they must not be left in the ground from year to year and be expected to do their share in colouring for the season. They must be lifted and replanted every spring with the summer bedding plants, or if made to do duty in the spring display, which this Nepeta will, although late, they must still be moved, otherwise they follow Nature's course and last during the months in which they flower whilst in an uncultivated state; but with this little trouble even, what a boon such plants are to us in saving house-room and potting.

This Nepeta makes a good mixed bed with orange, as Calceolaria, or as a centre to a large bed on grass with an orange belt, and then, say, Bijou Pelargonium. Last season we tried Tagetes, but this did not afford colour enough. The season before in a bed containing seven thousand Nepetas, we put in the old Orange Marigold; the two colours are perfect together, but, unfortunately, the Marigold does not continue in bloom long enough.—FLOWER GARDENER.

LADY DOWNE'S VINE.

I FORWARD a few remarks upon Lady Downe's Vine, the unequal breaking properties of which are a most serious drawback, with the hope that these observations may tend to relieve some of my brother gardeners from their difficulties in the matter. After drawing your attention to a case of my own, I will endeavour to explain how I mastered the defect, and how, I am sure, others may do so likewise.

In October, 1866, we had a house of Vines replanted, amongst which were several of Lady Downe's. One of them broke well at the bottom in April, also the top four or five eyes. As the cane was about 7 feet long, I had something like 3 feet of dormant eyes; they remained in this state, with the top of the Vine bent down, till all the eyes that had started had become strong shoots. I could not rest satisfied with this state of things—a yard of naked stem, so, to make short of the matter, I cut off the naked portion, with the promise of three or four fine bunches at the top. The Vine grew vigorously, and it was pruned back last December, when I left 3 feet of the leading shoot, the growth of which during the present year has been all that can be desired.

Another Lady Downe's Vine in the same house began the same "pranks" this year as the Vine just referred to. Having my attention drawn to the matter by a gardener who was in the same difficulty as myself, I commenced to experiment with, for me, the most successful results. In pruning I find Lady Downe's one of the most hardwooded of Vines, of course when well ripened. From this circumstance and the difficulty of inducing it to bear profusely, I inferred that the bark and scale over the eye must be strong, and too tough and tightly sealed to allow of the eyes breaking evenly and at the same time. By the

careful removal with my budding knife of this scale from the least prominent eyes, I have induced them, by the access of moisture, to grow without exception, and they are now showing fruit. I may here state that they were regularly syringed, and all the others broke well enough.

The Lady Downe's Vine treated of was tied down to the wire in front of the house some weeks after the other Vines were tied up to the rafters. Nothing seemed to stir the apparently-dormant eyes till the removal of the scale.

I have also found that the stronger the Vine the more difficult it is to induce the eyes to break. I find the Vines break well enough after they have once formed spurs; it is with the young rods that the trouble arises. I have seen them wrapped in damp moss with no benefit whatever. In my mind there is no doubt on the subject now. Lady Downe's Vine should have the leading shoot stopped that the lower buds may have every chance.—A. S. K.

POLYANTHUSES.

WHY is the best of all spring flowers so much unnoticed by all your correspondents, I mean the Polyanthus?

I have been gathering together this spring all the varieties I could meet with. Some I have purchased from gardeners, others I met with in Covent Garden Market, and some I picked up out of cottagers' gardens, and a few are seedlings of my own raising; one of these last is a handsome scarlet flower, which colour I had not seen before, so that wrongly, perhaps, I look upon it as a valuable variety. I have planted out a few seedlings, and have many more nearly ready, and the interest I take in daily watching them as they successively come into flower is very great.

Hitherto I have trusted the operation of crossing to the bees, as the shape of the flower unfits it for easily effecting this artificially. Should, however, any of your readers have accomplished this operation, perhaps he will kindly communicate the result.—T. P. F.

TREES AND FLOWERS AS FRIENDS.

FOREMOST among the chief silent friends, comforters, and cheerers of man are trees and flowers. I have sometimes asked myself, Which gave me the more pleasure? Perhaps a reader will answer readily, "Flowers." But think a moment. Time and continuity are great tests of friendship, and these tests trees will bear; for although flowers soon wither—die down—perish—trees are more constant; they abide by us always; they are neighbours, I might almost say, for ever.

Not only are trees with us in leafy June (the most enjoyable month of all the year in this country, surely), in bright green splendour, but when autumn comes there they still are, clad in another garb of beauty, more gorgeous though not so glad; and even in winter who would wish to be without his treey neighbours? The perfect symmetry of a tree is never better seen than in winter, and the dullest eye and heart recognise their vernal beauty. Also there are trees which never change their leaves, and so gladden us all along the dreary season by their greenness. Moreover, in those that shed their leafy garb, see the fantastic forms of beauty which they become when decked by a hoar frost, or a snow storm, especially by the former. I would say that nothing takes off the dreary feel of winter so much as the presence around us of fine-grown trees. When all that out of doors formerly cheered us is gone—when flowers, corn fields, and green grass are no more—when hedges have become little dark lines of intersected branchlets, yet the trees are there around us still, and present with us to comfort us.

Perhaps no one can so thoroughly appreciate the value of forest trees as one born, or having lived long in the fens of England. No one, not knowing that part of our country, can imagine the utter dreariness of those treeless flats during winter. They are the real plains, the flat expanses of England. Salisbury Plain is hedgeless and treeless, but it abounds with undulations; it is not a plain, and the undulations are chiefly grass-covered—hence our Wiltshire plain is by no means dreary. Not so the fens of Cambridgeshire and Lincolnshire. The eye there wanders on weary of the flat black surface, weary of the countless water mills.

"Oh! the dreary, dreary moorland,
Oh! the barren, barren shore."

To those who know the fen country, or have lived con-

tinuously there, the presence, and I may add the companionship of trees is doubly welcome. I have been witness in former years of the great love, almost reverence, which gentlemen feel for the few trees they possess. Just on one side of the market place in a fen town stood a large Elm; how it came to be there no one knew, for saving a few Ash trees, and pollard Willows (those wretched club-headed apologies for trees), there was no timber near. Just off this market place on a bit of waste land, a kind of plester or playstow, or playing-place for young people, such as that mentioned by Gilbert White, stood the Elm. So the place, so the tree, had remained for many years, when a speculating builder managed, I know not how, to buy the site, and he determined to pull down the tree. He was asked not to do it, but in vain; and when the day came, and the fine old Elm fell, there were groans for the Vandal, and many an old man's eye filled with tears, as he saw his friend of many years prone on the earth. Oh! that strange mixture of good and bad, our human heart! it has a tender place for an old friend, if even that friend be but a tree.

Trees have touched the hearts, and inspired the song of many poets. Take as samples these two tree pictures from the pen of Wordsworth:—

"There is a Yew tree, pride of Lorton vale,
Which to this day stands single in the midst
Of its own darkness, as it stood of yore.
This solitary tree! a living thing,
Produced too slowly ever to decay;
Of form and aspect too magnificent
To be destroyed."

Then follows a second tree picture, which has been particularly commended by Mr. Ruskin.

"But worthier still of note
Are those paternal firs of Borrowdale,
Joined in one solemn and capacious grove,
Huge trunks! and each particular trunk a growth
Of intertwined fibres serpentine,
Up-coiling, and inveterately convolved."

Then, too, there are the associations connected with trees. Look at a pollard Oak of large size. How very old it is, how very slowly it has grown, how many generations have looked at it. On the hills behind my house there is one, and I often look at it with reverence, and I say, "Perhaps William III. saw you, or very likely Sir William Waller saw you, or even Cromwell himself looked at your stem, and noted your fine look." Yes, perhaps—

"When all the paths were dim,
Beneath the Roundhead rode,
And hummed a sarly hymn."

And without doubt

"You have shadow'd many a group
Of beauties that were born,
In teacup times of hood and hoop,
Or while the patch was worn."

Let trees, then, have their meed of praise. They are constant, abiding friends to us. They vary, indeed, according to season, but each variation is a separate beauty; bud, leaf, blossom, shades of green leaf, lighter at first, then darker; then come the rich autumnal tints, and then the grand visible branches stretching far and wide during the winter months, long low-hanging limbs lying above, and not far above, the backs of the clustering deer; and when the hoar frost comes, the whole tree standing jewel-decked.

But let flowers also have their meed of praise. They are the loveliest of all things while they last; bright visitors, whose coming is looked forward to with longing—bright visitors that leave behind them pleasant memories, who are talked of after they have left us. I liken perennials to old friends that come and stay with us a few days each year—old, old friends, whom we have known so many years that we cannot tell exactly when our friendship began.

Then, as flowers differ in appearance, I liken them to different friends. Some I compare to quiet maiden aunts, whom all the children gather round and love, whom the youngest, that little impatient youngest one, obeys readily, and feels happy in so doing. Other flowers, not a bit like these, so my fancy runs, are so bright and glad-looking, that I compare their visit to that of some bright-eyed merry girl—merry, so merry, that she makes the house ring with laughter—merry so merry, that she even "makes a sunshine in a shady place," and her visit has made such a difference to the quiet home-routine, that when she is gone you wonder and mark the change, and sigh to think that in a few years the world's heavy weight will subdue to a quieter tone even that merry laugh. And so of other and other flowers.

Lastly, of trees and flowers, the former we wish to have, the latter we must have, as the child will pluck the Daisies. Happily our craving can readily be satisfied, for flowers are easily carried into the heart of great cities, placed by sick beds, found or taken everywhere. No need of choice sorts for these purposes. The sprig of Lilac, the nosegay of common flowers, from a common garden, are sufficient, are welcome, and give untold happiness.—WILTSHIRE RECTOR.

FLORISTS' FLOWERS

AT THE ROYAL HORTICULTURAL SOCIETY'S SHOW—APRIL 18TH.

At the very time when all the Auricula-growers in and about London would have been thankful to have competed, positively the Society offers no prize; and Mr. Turner sends his hundred plants to be shown in the miscellaneous class for perhaps 10s. or 15s., and on the 9th of May, when he and many southern growers will have repotted their plants, then prizes are offered. Now I happen to know that in this case, before the schedules were printed, alterations were suggested by a very influential officer of the Society, and were quietly ignored, while afterwards Mr. Turner pointed it out; but nothing could be done, and so the matter remained.

Mr. Turner and Mr. James both deserve credit for bringing forward fine collections of these beautiful flowers, which require more care and attention than suit half the good folk who think themselves to be gardeners now-a-days, and who affect to despise such things as these florists' flowers. Doubtless it requires an educated eye to appreciate their beauty. Thus one good friend, who can grow a Rose as few can, said to me in looking at them, "Ah, that nasty paste!" The heretic! And another says, "Doubtless those Alpines are more beautiful;"—rubbish as compared with the beautiful stage flowers alongside of them. Where will you find such colours, such refinement, such peculiarity as amongst them? There are violets and bluish blacks amongst them that are absolutely not to be found elsewhere in Flora's domain, as, for example, Moore's Violet and Chapman's Maria; while the varied character of the foliage is itself a treat.

Mr. Turner's flowers struck me as better than ever. Sometimes I have found fault with them as overdone, and then their character is lost, for if an Auricula be coarse it is worth but little. The seedlings of Mr. Turner exhibit many good points. Colonel Chamneys is a fine grey-edged flower, somewhat in the style of Dickson's Prince Albert, and, like it, inclined to be what my dear good friend Mr. Jeans used to call "goggle-eyed." But what in the world did Mr. Turner put up that yellow self Canary for? To the border with it, along with Gorton's Stadtholder, would be my verdict. Some of his flowers were very fine:—Chapman's Sophia, with its brilliant colour; George Lightbody, in admirable condition; Glory, the glory of white edges still; Chapman's Maria, in some points the most remarkable Auricula in growth; Dickson's Unique, very peculiar in its colouring; and a number of others new and old. By-the-by, Mr. Dean, you are wrong about Bright Phoenix. It is, perhaps, instead of being new and rare, one of the oldest, commonest, and, I may add, least valued of white edges that we have.

Before I leave the Auriculas, let me thank "J. M." for his communication, and say that I hope ere long to have another chat which may satisfy him and the amateur who hails from Christchurch, Hants; but at present I hope he will pity an unfortunate who, unlike Sir Boyle Hooke's bird that could be in two places at once, is in no place at all—suspended like Mahomet's collar, and who has to superintend the removal of his plants during next week.

I am more than ever convinced that forced Roses are a mistake for the real connoisseur, the only class that really comes out well being the Teas. Of all others, they come so much out of character that even a practised eye could not in many instances say what they were. Of Tea-scented Roses, it is quite clear that three out of last year's are valuable additions—Monsieur Furtado, Bontou d'Or, and Madame Margottin. I saw nothing else worthy of note.

Must not the Cyclamens soon be ranked as a florists' flower? What variety and what beauty in that fine collection of Mr. Wiggins, who also contributed some good Polyanthus. Can nothing be done with this latter flower? The old varieties are hard to get, and new ones ought surely to be raised of greater beauty and novelty? Or is it one of those flowers that seem to defy the efforts of the hybridiser?

My visit was a very hurried one; nor could I have paid it at all unless I had been going to take duty in Dorsetshire, and so seized the opportunity in my way through. I cannot but lament that these Shows are held on a day which practically excludes so many of us from enjoying them.—D. Deal.

SLATE EDGING.

In reply to the inquiry from your correspondent "E. T." about slate edging for flower beds, I would suggest to him a form of edging which I have found cheap, effective, and very handy. The ordinary slate edging consists of blocks of slate trimmed and smoothed, and seems to me too expensive for general use. I obtained a number of the smallest-sized roofing

slates, 12 inches long by 5 inches wide, and set them on end, about 8 inches being below the surface of the ground, forming a double row of slates edge to edge, and taking care that the two edges in the inner row met at the middle of the slate of the outer row. One man can put down many yards in a day, and the material costs me less than three farthings per foot.—W. A. DARBISHIRE.

[Our correspondent lives in the land of slates, Wales.—Eds.]

CIDER AS A TEST OF THE QUALITY OF APPLES.

THE flavour of the Grape has been discussed by those who propose to establish rules for the guidance of judges engaged in awarding prizes at horticultural exhibitions; and why not also inquire into the merits of other fruits? and by carrying the investigation further than has yet been done in the case of the Grape, it is possible we may arrive at the conclusion that some of the points of excellence are attributable to causes over which the cultivator has but little control.

The fruits to which I would more immediately call attention are the two most common and hardy of our large fruits—namely, Apples and Pears, and it should be our endeavour to ascertain under what conditions the best samples of each are produced, and why fruit from one place has the reputation of possessing a finer flavour than that from another situation apparently equally favoured, as far as position and natural advantages are concerned. Samples of the same fruit grown at two places frequently differ much in quality, although the culture may have been the same in both cases; but the cause of this has not received the attention which the subject deserves. A short time ago some cases came under my notice which seemed to me to account in a great measure for this apparent anomaly, and to afford a good reason for assuming that many other cases of a similar kind may be traced to a like source.

Assuming the palate to be the criterion by which the merits of several samples of fruit are tested, it need scarcely be remarked that the results arrived at by the trial of a few dishes at ordinary horticultural shows, are not sufficient to satisfy those who may be disposed to consider the produce of one district superior to that of another, as the palate of the taster is liable to be cloyed, and the few examples the judges are able to test hardly enable them to say more than that dish No. 1 exceeds in flavour dish No. 2, and so on. The general public seldom inquires into the conditions under which the winning samples were produced, and even if this were done, other properties, such as size, appearance, &c., are taken into account in making the awards, and flavour alone is seldom regarded. Now, the case I have in view, is one in which a large quantity of fruit of one district excels that of a similar growth in another, even where latitude, position, and other natural advantages appear to be much the same. It is only just to suppose this to occur in England as well as abroad, for it is well known that certain districts in the wine-producing countries furnish wine of a superior quality to that which can be produced in neighbouring districts apparently equally favoured by Nature, and the skill of the cultivator. The exquisite quality attained in the one district cannot be matched in the other, and so often has this been found true, that we may fairly assume that what has baffled the world-be wine-producer abroad, has in some degree a parallel in this country as regards more hardy fruits. Certainly the cases that will be recorded here resemble those of the good and indifferent wine-producing districts.

In the southern and western counties of England, it is usual to make large quantities of cider from such Apples as there is no sale for, or which are not valuable enough to be retained for other purposes. This ordinary cider is almost always made of mixed fruits, a superior kind being made either of some one celebrated variety, or of choice kinds only. Of this it is not necessary to say much, as it is not the kind by which a fair comparison between the produce of different districts can be made, it being a fancy article, and often bearing a fancy price, and certain cider-makers in the west of England are noted for its production. My purpose, however, is to compare the common or ordinary article of one district with that of another, and here will be found a difference difficult to account for, and certainly so far as I can see, that difference is not likely to be ever removed by cultivation; natural causes, and these only, appearing to produce so much difference. And in the matter of the flavour of fruits of other kinds, may we not

reasonably suppose that similar causes may have exercised a like influence? Confining the matter to cider let us see the effects which are perceptible to every one in two districts in this county, and endeavour to trace the cause.

In the southern side of the county of Kent, adjoining Sussex, the country presents an undulating surface, and towards Tunbridge Wells rocks of a soft kind of sandstone crop out, and a similar kind of soil and substratum pervades the adjoining boundary of Sussex. The presence of stone, however, does not seem to be required by the Apple, but I imagine the chemical composition of the soil, whatever that may be, to be the same in most of the districts alluded to, whether the stone is present or not. The proportions of lime or chalk would appear to be a very small one indeed, while iron in some form seems to abound. In such soil the Apple grows freely, and the cider made is much sought after.

Taking another district a few miles to the north of this, we have ridges of chalk hills, with some eminences in which limestone or rag predominates. This district is not by any means less fruitful than that just alluded to; and I believe the fruit as a general rule is larger and finer-looking, and other crops also show in some places an amount of fertility not to be surpassed. Of course, in the thin shallow soils agricultural crops and grasses are none of the best, while hedges and forest trees of most kinds seem quite at home; yet the quality of the cider made from the Apples grown on such a soil is far inferior to that made in the other district, and has been established by so many years of trial and so many hundreds of judges, that the cause would appear to be due only to some difference in the chemical properties in the soil of the one place as compared to the other. Now, this is not a case in which half a dozen, or perhaps only half that number of critics, have awarded a prize, but where a whole people may be said to have pronounced an opinion of which the justice is not questioned; and when we take into consideration the fact that the fruit from the district producing the best cider is in general not so fine as that of the other district, and rarely brings so high a price in the market, the question may justly be asked, Is the same result not likely to occur with Grapes? Leaving this unanswered, the state of things described above opens up a wide field for speculation, though it is somewhat humiliating to our vanity, as proving that our efforts in the way of cultivation are after all only a secondary matter as regards the final result.

Wine, cheese, and cider are indebted to the skill of the manufacturer as well as to the quality of the material they are made from; but it is questionable whether these and some other articles were not equally good, if not better, a hundred years ago than they are now; and I may add that in the cider counties some of the kinds of Apples no more to be had, seem to be regretted. The management of cider is certainly not so well understood as it ought to be, and the instances in which it is either spoiled or nearly so are numerous enough. Most likely when greater facilities occur for the transfer of small and moderate-sized fruit from the orchard to the back streets of our large towns, where they are at all times acceptable, the quantity consigned to the cider mill will be much smaller. As it is, only the inferior Apples are made into cider; and in seasons when the general crop is light, and the price pays the grower to send the fruit to market, the quantity is still smaller. Other causes, such as the popularity of light beer, have also tended to diminish the demand for this beverage. Let it be borne in mind that my object in writing upon it was to show that soils have an influence on hardy fruits, which it is vain to look for pruning of any kind to counteract.—J. ROBSON.

HARLAXTON.

THE SEAT OF JOHN SHERWINE GREGORY, ESQ.

THIS is one of the most magnificent mansions in England, both in regard to its size and the elaborate and splendid style of its architecture. It was built by Gregory Williams Gregory, Esq., who died in 1854, just as he had finished it, and furnished it with all that could be collected of what was most rare and costly in the shape of furniture and works of art. After his death it passed into the possession of a brother, who threw it open to the public; and such was the rush from all parts of the country to see it, that a large hotel had to be built close by to afford the visitors temporary accommodation. It was during this period that Her Majesty the Queen paid it a visit; and it was surmised that it was to be purchased for the Prince of Wales. On the death of its then owner—who most injudiciously left

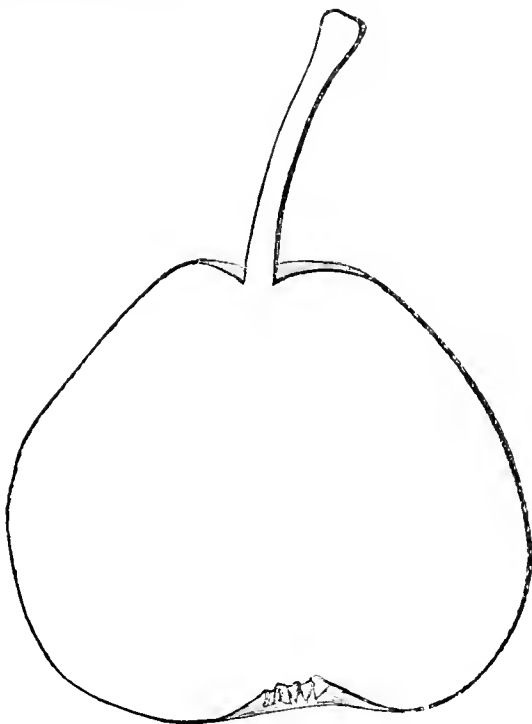
the furniture and works of art to one, and the estate and mansion to another—it was shut up, and the hotel stands deserted. Litigation was had recourse to in order to determine what was furniture and what was not. This has now been settled, and all the gorgeous furniture and splendid tapestries, as well as statuary, removed. We saw it in its glory, and we saw it after it had been sacked, for its treatment deserves no other name. The present owner is, however, redecorating the rooms where the tapestries have been taken down, and refurnishing them in a very elegant modern style,—lacking, however, the interest which it had before, where every piece of furniture was worthy of particular study.

There are features of special interest in the gardens at Harlaxton, where, adjoining the mansion at various points, are five conservatories, built of stone, marble, iron, and glass, most elaborately decorated, and furnished with marble fountains and basins. Some are stove conservatories, others greenhouses, and well furnished with plants. To the south and west fronts are elaborately terraced and decorated flower gardens, where enormous sums have been spent on masonry and sculpture in laying them out. Here we saw last August splendid masses and borders of all the principal bedding plants in great beauty, doing Mr. Vinden, Mr. Gregory's most intelligent gardener, great credit by the taste displayed in their arrangement as well as cultivation.

The kitchen garden and forcing houses are about half a mile from the mansion, on rather low ground. The garden walls alone cost £10,000; they are 20 feet high, built of brick, with elaborate stone dressings and copings, having niches at regular distances intended for statuary—the whole so utterly unlike anything else we ever saw before, that an intelligible description of it is impossible. Only a small part of the glass that was intended has been erected, and it is principally devoted to Peach and Grape culture. The Vines and borders stand in need of renewal. Here we saw the finest Cherry trees (Morello and May Duke) we ever beheld. Many of the Pear trees are also very fine. The management of the place, considering the staff of men kept, does Mr. Vinden much credit.—W. THOMSON (in *The Gardener*.)

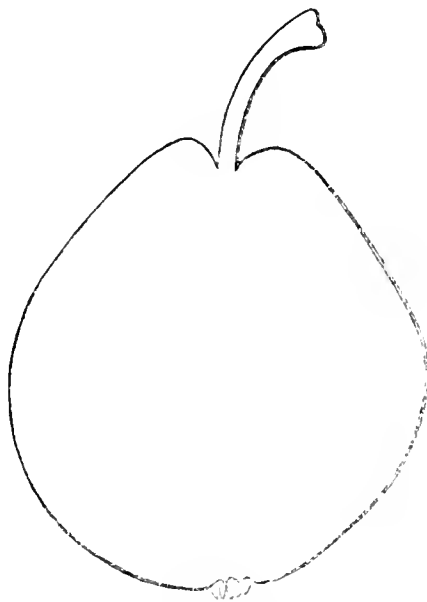
PEARS.

12. AMBROSIA.—Flesh highly perfumed, melting, and juicy. Ripe in September. Switzer says it was introduced soon after Charles II.'s restoration.



Ambrosia.

13. AMÉLIE LE CLERC.—Not superior in quality. Ripens in October, and soon decays.



Amélie Le Clerc.

For full descriptions of these varieties, see Hogg's "Fruit Manual."

A NOVEL MODE OF GROWING MELONS IN HOUSES.

As this is the season for planting Melons, I think the following mode of cultivation may be interesting to some of my brother gardeners.

In the first place, plants must be raised in the usual way, which I shall suppose every gardener understands. The sorts to be grown must depend on taste. Some gentlemen are very peculiar in this respect, and I must say that Melons more than any other fruit have a great variety of flavours. I shall suppose that the plants have been potted-off; and generally for houses they have to be grown 15 or 20 inches high before they reach the wires, which will take from twelve to eighteen days, according to weather and other circumstances. This growing to reach the wires is a great loss of time, and with this object I have often seen plants drawn up with poor small stems, and they must consequently be very much weakened, and in the end not able to grow or ripen a fruit fit to be sent to table.

I shall now proceed to make the bed, which must have a good bottom heat, either from hot water or from stable manure properly prepared. The soil I prefer is a strong loam well beaten down and made quite firm in the usual way. I next bring in as many 4-inch drain pipes (not glazed—the old clay pipes are far the best, because they absorb moisture), as I require plants, place them upright on the flange end on the bed, cover the flange enough to make them stand firmly, and then fill the pipes up with soil. This I make firm, and then I plant out in the small end of the pipe.

I have known good, large, well-flavoured Melons grown in this way in much shorter time than without the pipes. I hope some of my fellow blue-aprons will try this mode of cultivation; it saves time, does not weaken the plants so much as the ordinary mode, and watering can be better regulated. The roots will soon find their way down the pipes into the bed, and the plants are not so likely to rot off at the collar.

There are several good reasons for growing Melons in this way. First, they can be planted out and afterwards stopped at two or three eyes, and they will commence to throw out laterals at once; fruit can be set in about eighteen days, whilst in the general mode of management the plants would have only reached the wires; and, lastly, at the period of ripening one can regulate watering to a nicety, and on this, together

with sun and air, depend the flavour and quality of Melons.—
J. R. P., *Bickley, Kent.*

DESTROYING ANTS.

I HAVE read in your correspondents' column the question asked, How to destroy ants? and the answers, effectual in their way, were dangerous, as poison was to be employed, spread in their walks or near their haunts. My house was at that time infested with these insects, and has been so more or less through the winter, but the last few fine days have brought some hundreds out, so that scarcely anything could be kept in a cupboard, which they had access to through holes in the wall. I laid some moist sugar near the holes, and after about an hour I returned, and could not see the sugar, as it was entirely covered with ants of all sizes from a speck to a barley grain. I then with a flat-bladed knife destroyed every one of them, and on looking to-day at some more sugar laid in the same manner not one ant was to be seen. I, therefore, conclude that I by means of a little moist sugar enticed a whole colony of these insects, and destroyed them without the use of any dangerous poisonous mixtures.—EDEN GROVE.

WORK FOR THE WEEK.

KITCHEN GARDEN.

WE seldom have finer weather at this time of year for all out-door operations. Several correspondents state that the wall fruit promises to be a large crop, and appearances warrant the same conclusion in regard to the standard fruit. *Celery* and *Lettuce*, plants lately pricked or planted out—indeed, any small plants which have been lately transplanted, will now be in danger if the weather be dry, and they must be regularly watered, and so must crops of *Turnips* and other seedlings as they are coming up. *Cauliflowers*, when transplanted, every care should be used not to injure the roots, and the plants must be well supplied with water until they become established, as neglect in either particular will probably cause them to flower prematurely, and thus occasion the loss of the crop. Even when the plants are fairly established they must never be allowed to be dry at the roots, and an occasional soaking of manure water during dry weather will greatly benefit them. *Onions*, see that you have a bed or border prepared to plant out the thinnings by-and-by, and sow a bed of the Silver-skinned in light poor soil some time soon to come in for pickling. *Peas* and *Beans*, keep the ground between the rows well stirred and free from weeds. In dry weather mulch with manure for 18 inches on each side of the rows, giving a liberal supply of water when necessary to keep the plants vigorous and to prevent mildew. The growing crops of *Peas* should never be allowed to suffer from the want of water. In exposed situations strong stakes driven in on each side of the rows of Broad Beans, and common tarred cord stretched along them, will be useful to prevent the plants being beaten down by the wind. Where water is a scarce commodity many shifts must be resorted to in dry weather. The best substitute for heavy watering is to mulch with short grass between the rows of advancing crops. This will save much time and labour. Even when water is plentiful, simple as the operation of watering is, few things are worse performed. One good watering that will saturate the soil, provided the surface is mulched or stirred afterwards, is worth a dozen mere sprinklings, because the one watering will often be sufficient, while the many waterings are generally prejudicial. In the one case the roots are discouraged from coming to the surface, the dryness of that surface prevents rapid evaporation of moisture from below, and the roots are, therefore, enabled to absorb freely to supply the exhaling foliage. In the other case, surface roots are for a time encouraged, but are speedily checked, as the sun quickly causes the moisture of the surface-watering to evaporate.

FRUIT GARDEN.

Keep a regular eye over the wall trees, and see that no insects or other vermin establish themselves there; the young shoots must also now be well attended to. Never cut-out or otherwise prune too much of the summer growth at once. It is much better to begin in time and stop the strongest shoots only at first, and so on through the growing season.

FLOWER GARDEN.

The importance of grouping plants in flower gardens according to their complementary colours has been repeatedly insisted on. The leading principles of this system of manage-

ment are contrast and symmetry—contrast such as will be produced by placing the complementary colours pretty closely together—as scarlet with white, purple with yellow, orange with blue, and so on with the various shades of these colours; and symmetry, such as will result from every bed having a corresponding one in form and disposition when beds are planted with flowers of the same colour. Where beds are planted on grass and without a corresponding one near them, they should be belted with the complementary colour—as blue with an orange margin, purple with yellow, and scarlet with white; or as green is the proper contrast for scarlet, beds of that colour may be left without a margin, and white, under such circumstances, used as a distinct bed. Where beds are on gravel, which is of a warm colour, a cold colour should be the most used, as blue, purple, and white, which for floricultural purposes takes the place of green; or if warm colours must be introduced, it is indispensable that they be margined with cold colours. In large gardens where there is a great preponderance of green—as large lawns, or trees, and extensive lakes, more especially if the trees are large to throw considerable shade, nothing but warm colours should be used—as scarlet, orange, and yellow, and these should be in large masses and stand out prominently in the foreground of the scenery, and especially near the water. Whoever has walked through the metropolitan parks will have noticed how much more cheerful is the aspect of the water in St. James's Park, than it is in the Regent's Park, or Kensington Gardens, and this is because the water is surrounded by gravel which gives the appearance of warmth. Watering and thinning the young plants are the principal work at the present time; but double Primroses, Polyanthus, &c., which are out of bloom and being removed from the flower garden, must be parted, planted in rich soil in a shaded situation, and watered. This is a good time to tie-out or peg-down the branches of American plants, so that the young shoots may take the right direction when they begin to grow. In high and exposed situations the plants must have water, or they will be unable to expand their blossoms properly.

GREENHOUSE AND CONSERVATORY.

Now that the season is so far advanced that many of the older kinds of plants often wintered in conservatories may be removed to temporary shelter, no plant, except in flower or a fine specimen, ought to find a place in the conservatory from this time to the end of September. As the spring Heaths go out of flower remove them to cold pits. If they are young plants this is the best time to prune them. As soon as the growth of forced plants of *Rhododendron arboreum* is nearly over remove them to a cool shaded place, as this and many of its hybrids are easily induced to make a second growth, and, consequently, produce no flowers next season. Keep all plants well watered and in good shape. Encourage greenhouse plants to make a rapid growth now. Keep the house warmer and more moist than is generally done, and see that this moisture does not deceive you. In watering, many pots may look wet on the surface and yet be dry below. Train, pinch, and prune them as circumstances may require, and, above all, keep them perfectly clean.

STOVE.

Some of the more free-growing plants that were potted early will now want another shift, and you may give them more pot room now. Many young plants nursed in pits through the spring will now be too high, or the pits may be wanted for other purposes; remove them to the stove, and for the first week or two imitate the pit culture for them as far as your house will allow. Keep them more shaded than the rest of the plants, syringe them twice a-day, and keep them as far from the ventilators as you can.

FORCING PITS.

Most of the spring-flowering plants are done with in these pits. Roses will now bloom in any close house or pit. There are many plants, however, that may be more or less forced for the conservatory all the summer through, especially those called intermediate or half-stove plants. Camellias, Azaleas, and *Rhododendrons* that have been early forced may be grafted as soon as the young wood begins to become hard. Of all the modes of propagating rare plants, grafting is the easiest and requires the least time and attention.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Saving Seeds.—When a person has the chance it is well to save a few seeds of a favourite kind of Pea, as then it is more

to be depended on than what is sent out by general seedsmen, though our own experience and practice would lead us to the conclusion that seedsmen spare no pains nor labour in having everything good and everything true to name, and no doubt they find that intelligence and integrity combined will pay. Mistakes will, however, at times occur. Just think of the results of a heedless man shifting a few numbers or tallies inconsiderately. Most seedsmen this season, we believe, have told their customers to sow some seeds thickly. Last autumn was very unfavourable for harvesting seeds, and no doubt from being imperfectly ripened, or to make up bulk with older seeds, the crops of some things do not come up so freely as usual, and in such cases will save thinning, as in general it is a fault of gardeners to sow rather thickly, though it is always more pleasant to thin out than to plant and make up. Partly from the seed decaying, and partly from the inroads of vermin, we have been forced to dig down one row of Peas and sow another kind, for if we do stick our Peas nothing looks worse than a thin row. In this respect we often minister to a general prejudice, though we know better. Were we certain that our seed Peas would be let alone, instead of scattering the seed along a row we would gather a heavier crop by planting all our larger Peas in a single row 2 inches apart.

Vegetable Seeds.—Making every allowance for birds finding their way underneath the netting, the seedlings are threatening to come much thinner than usual, showing that, like larger seeds, as Peas, the late harvesting time had told upon them. We do not see that any seed has been maddled with that was treated with a dusting of red lead before sowing, but that expedient will not prevent the different kinds of *grass mice* eating down the young shoots of Peas, &c., after they are fairly above the ground. We shall be glad of any information as to the best means of destroying grass mice, as even some parts of our lawn are riddled with their runs and holes, and trapping does little to thin them, and they can scarcely be coaxed to touch anything in the way of a bait that would hurt them. We caught great numbers at one time with nooses made of fine wire, and even of strong hair; but we should be afraid to venture to use them now for fear of younger and more valuable animals being caught. We have some beds with stake edgings covered with ivy, and these are a favourite rendezvous; in their vicinity it would be folly to plant some kinds of *Verbenas*, especially *Purple King*, as the mice are nearly as fond of that as rabbits are, and the latter will find it out if they have the chance among hundreds of other *Verbenas*, if as many are grown.

We saw lately what was a beautiful plantation of young Laurels almost destroyed, for it was cut and peeled from the surface of the ground nearly to the tops of the plants, and the plants are now all withered. If there is a chance at all, the plants must push up afresh, and then run a similar risk. In most cases this mischief had been done by the common house or barnyard mouse, and we have caught these in great numbers by sinking pots inverted inside, one-fourth filled with water, and a float on it, supplied with burnt meal or toasted cheese. When the mouse got his feet wet he could not lay hold of the sides of the pot. Glass would be still better than earthenware. Such a contrivance even when baited with the most tempting green delicacy did little to entice the grass mouse. The best helper we ever had was a little dog, who took to the work with much zest, watching their holes for most of the day, and killing numbers of them. If any reader will acquaint us with a good way of thinning grass mice many will be thankful, for in some places now the mere act of culture is of less importance than knowing how to give the plants grown a fair chance of having their natural enemies kept at a distance.

Asparagus.—We have just cut over a young piece of this for use and to encourage the side shoots to push, so as to afford us a supply a good while longer. In small gardens this is not nearly so much grown as it ought to be, as few vegetables are better for a late spring supply, coming in as a change when the Brussels Sprouts are nearly over. Shoots about the thickness of the little finger, and 6 or 8 inches in length, boiled just like other Greens, are little inferior to Asparagus in flavour, and will compete with a stubby list of Sea-kale in all but the colour. Our earliest have been a good long ago, but a few rows of late ones were topped for use a week since, and the side shoots are now growing well. All Hales have something in common, but this well deserves its name. It does not take so much room as the Scotch Kale, and is of but little use as winter Greens, but in April and part of May it is very useful as a change with sprouts of Borecole, young Cabbage, and Broc-

coli, holding its own generally until the Cauliflower compels obedience from all rivals. Brussels Sprouts and Borecoles are the main dependence in winter, and the coloured or variegated kinds of the latter are just a little more tender than the green, and if carefully cooked will present their colours at the table.

Sea-kale.—We shall gather a week or two longer from that under the common garden pots. We detailed how we stuffed the inside of the pot with rough hay, leaving only a hollow in the centre, and dispensed with covering outside the pot. The utility of this was found in the late frosty mornings, for where the pot was set over the plant, and there was no hay in it, the Sea-kale instead of being white was frosted black. We want to have none of this trouble with pots in spring, and, therefore, we have planted some beds 4 feet wide, with two thick rows of plants in each, and made trenches between the beds, 2½ feet wide at top and 1½ inches at bottom. These when we have time we will fill with riddled ashes, and in winter we shall lay the ashes on the bed 5 inches deep over the plants, and that will cause them to be sufficiently blanched, and if merely once cut in the season, the same plants will last many years. Most likely we will put some litter over the bed and in the trenches in winter, and that will be rotten enough to do for manuring the beds in May, when the ashes will be all turned into the trenches again.

In planting these beds, we cut all the ends of the roots into pieces 6 or 8 inches long, and planted them in rows a foot apart and 8 inches from each other in the row. These will do for thinning next year. We will fork over the ground as soon as we cease cutting among the established plants, and where an extra shoot has strayed, cut it near home, add a little dung whilst forking over, and strew a little salt between the rows when finished.

Asparagus.—We should have salted the ground in which this is grown, but could not obtain the salt in time, and now we will wait until we see the rows, as the heads are beginning to appear, and the salt would injure them if it fell on the points of the young shoots. This sprinkling in spring does much to keep down weeds; but the time when as much salt as will just slightly whiten the ground does most good, is a fortnight or so after ceasing to cut. Sprinkling with salt affords this plant and Sea-kale a substance which they obtain in abundance in their wild state. We regret omitting the sprinkling ten days or so before the shoots of the Asparagus appeared, as nothing so effectually banishes slugs and snails, which when plentiful soon mar the best shoots.

Tom Thumb.—Little Gem in the orchard house, in pots, is filling its pods well, but though nice and stubby in growth, and showing signs of throwing out side flowering shoots at the joints, it does not seem to bloom and bear so freely at first as our old friend Tom Thumb. Little Gem is superior to the Tom Thumb in flavour; but then at an early period quantity is an object, even if the quality be not so much to boast about. We think we have erred, too, in planting rather thickly; and another season, if using 16-inch pots, we would have a circle 1½ inch from the outside, and have the Peas about 3 inches apart.

Pea-staking.—In the dry days that followed the rain, we had the most of this work done that could be done, moving our wire netting to accomplish it. The ground was nicely stirred up, but not deeply, by the sides of the rows before staking. We have had much trouble with Peas, with the exception of those we planted out, which have done well, especially after the watering referred to last week. In staking, we saw lately that one of our friends recommended crossing the sticks to each other at top, so as to resemble an acute-angled triangle, of which the ground between the stakes at bottom should be the base. Our staking is often done the same way; and almost every staker will resort to that mode, because it is the most easily done, looks very well when done, and answers well in every way until the Peas get to the top of or above the stakes, and coming through near the top are as helpless in the wind as if they had never been staked at all. The Peas will be better sustained and more safe at gathering time, if the stakes, where they diverge from the perpendicular, lean outwards from each other at top instead of leaning towards or touching at top. We prefer the tops of the sticks to resemble the sides of a cup rather than the point of a wedge, though we allow that the latter to many would look neater. We know that the cup form will be best for the Laurel of the Peas in a brisk gale.

Dung Beds.—At the risk of being wearisome we will venture a few sentences with reference to cases submitted to us by three correspondents. The first, even with well-prepared dung,

cannot keep up bottom heat without frequent turning and making fresh linings. The second goes on pretty well with the back of his bed, but the front soon becomes cold, especially if much rain falls and runs down from the glass; and the third is in straits whether he should make his bed on an elevated piece of ground or sink it partly below the ground level, and adds that he must make the most of his material. To the first we would say that we scarcely trouble ourselves with linings, if at all, until towards the end of summer; but then we, as it were, make bed and linings at once by having the bed some 18 inches wider back and front than the frame. We keep banking up on that well up the outside of the frame, so as to supply atmospheric heat without increasing bottom heat. We save the heat also by sticking laurel boughs, or placing old hurdles thatched with laurels, round the sides of the bed—a matter of importance, especially in cold windy weather. We think the plan on the whole saves labour and trouble, but we by no means expect or wish that others should think and act just as we do. We would at once change if we could do better and on the whole make more of our material.

What our second correspondent says is perfectly true, and holds good with all frames on dung beds. In heavy rains the water will run from the glass on the lining or front of the bed, and it will soak inwards until it robs the front of the bed of its heat. The simplest plan to obviate this is to have a board or boards sloping in front to throw the rain water off. The next simplest, and better, is to have two slips of wood the length of the frame, 3 inches wide, and three-quarters of an inch thick, two of the sides bevelled, so as to form an acute angle when joined together, and thus make a handy spout. A little tar run along the bottom of the letter-V spout will make it all tight, and even a little clay will do, and the water can thus be easily taken away. We say nothing of what would be better still—a small spout of tin or zinc, but the wooden one will answer admirably, and do much to prolong healthy sweet heat in hotbeds.

To our third correspondent we would say that in early beds we prefer that they should be partly sunk, say from 18 inches to 2 feet or 30 inches, partly because they are more easily worked and managed, when you have neither to stoop too low, nor raise your body too high, and partly because what is thus sunk is less exposed to wind and air, and is not, therefore, so quickly cooled. Another reason is that great mounds of dung hotbeds raised wholly above ground make a striking appearance, and look like something that never could be exhausted; but half sunk in the ground they become very petty-looking, and hardly arrest the attention of those most intimately concerned in supplying the gardener with manure, and the best of it is they do not contain a barrowload of material the less, though thus so unobtrusive in their appearance.

FRUIT GARDEN.

Went on nailing as we could, when other work and weather permitted. One advantage of all the pruning being done is, that the mere nailing can be done more pleasantly than in winter, and such as Morello Cherries can have an extra pruning, as the wood buds can now be better seen. A press of other matter has kept us back here, but we will soon have all straight. The few laurel boughs have not quite saved Apricots from the frost, but a considerable number seem all firm. The wet followed by frost did the mischief. Hence when protected at all, a covering to keep the blooms dry is the chief precaution necessary. It requires a sharp frost to hurt an Apricot bloom, if it is dry. Peaches have suffered little, but we see some coming on the young shoots, and will give a good washing with the garden engine during a fine day. Cherries and Plums seem all right: Pears are in bloom, and Apples beginning to open, and looking well, as from our little trees we have kept the birds off. In a small orchard not worth keeping, and too small to be worth watching, hardly a wood bud, let alone a fruit bud, is to be seen.

Orchard Houses.—Merely for shelter these can now be erected so cheaply, that in all cold places they will be much cheaper than protecting against the open wall. On trees on walls, and in pots, the young fruit will give plenty of work, being as thick in many places as ropes of Onions. In the latest houses, the bloom falling from Cherries, Plums, &c., a slight syringing was given, and after warm days a good syringing was afforded to the more forward trees, and once or twice a-week the syringing was done with soft water as clear as brown brandy. We would rather keep insects from appearing than have to destroy them afterwards, and as yet we have succeeded well. We noticed to-day a curl on the point of some Plum

shoots that told of a caterpillar being housed there, and these shoots were at once carefully nipped off, held firmly, and taken to the nearest fireplace. The shoots needed nipping at any rate. The syringing two or three times a-week renders less watering necessary.

In the most forward orchard house we moved some Strawberry plants in pots set on rich leaf mould near the front, moving them much against our will, because when the roots begin to come out at the bottom of the pot it checks the plants to disturb them; but they had thrown up such an abundance of strong flower trusses that they would have injured each other without more room.

Moved a lot of British Queen into a pit, setting them on a bed surfaced with fine soil, as if the roots run through now we hope it will not tend to encourage the leaves too much, instead of throwing more strength into the flower trusses, as would have been done at an earlier period. We were obliged to fumigate a fine row, just setting well of Keen's seedling in the late vinery, as some dry began to cluster on the pedicels of the flowers and young fruit. Now, whence came these insects? The house was filled with flowering plants, and nothing of the insect on them. The Strawberries a few days ago were equally clean, and now they would soon have been smothered if let alone. Had the eggs kept their vitality all the winter and owed their development to the greater heat of the house? Some plants in the first orchard house are nearly as forward, only a few days behind, and as yet nothing appears on them, but we should not be surprised to see some there too in the course of a week. Heat is the great friend of these marauders, and cold is their great opponent. Extremes are often valuable: hence, we value a cool temperature and hot-water washings, especially when plants are in comparative repose, as good resources for keeping insects aloof. We were obliged to smoke the Peach house because the Strawberries when at about the same stage were also visited in a similar manner, though a day or two before not an insect was to be seen on them. When only a few appear the fingers can soon settle them, but when numerous there is nothing like smoking, and generally doing it twice. Strawberries for two or three years have made us resort to this disagreeable work, when otherwise the houses wanted nothing of the sort. Proceeded with thinning and regulating vineries, &c.

ORNAMENTAL DEPARTMENT.

In potting Ferns and other plants, lardening bedding plants, and getting those potted that do best with a ball, as Heliotropes, and making the last cuttings of those things likely to be useful, the most of our time has been taken up, but there was little different from what has appeared in recent numbers. We put in some hundreds of little slips from the bottom of the *Cineraria maritima*, as many of the old plants in low ground have died, and because these cuttings, which will be good plants ere long, will have the fine silvery foliage which seedlings never have the first year. These cuttings will average 2 or 3 inches long, and they were taken off with a little heel just as they were showing on the old stems and coming above-ground. They will have a gentle heat.—R. F.

TRADE CATALOGUE RECEIVED.

Charles Turner, Royal Nurseries, Slough.—*General Spring Catalogue, 1908.*

COVENT GARDEN MARKET.—APRIL 29.

We have still a great abundance of produce when compared with the demand, which, however, is somewhat improved, and strawberries have slightly advanced in price. French beans, etc., comprise Peas, Broad Beans, Cauld-wers, Artichokes, young Cabbages, Turnips, and the usual samaras, with a few but not many Cherries in the market. Old Potatoes are a heavy trade: good new Liston range from 6d. to 7d. per lb.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples sieve	8	4 to 5	0	0	Melons each	0	1 to 2	0	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	1	0	0
Cherries lb.	0	0	0	0	Oranges 1 lb.	0	0	0	0
Chestnuts bush.	0	0	0	0	Peaches doz.	0	0	0	0
Currents sieve	0	0	0	0	Pears 1 doz.	4	0	0	0
Black doz.	0	0	0	0	Red Apples lb.	0	0	10	0
Figs doz.	0	0	0	0	Plums sieve	0	0	0	0
Elberts lb.	1	0	0	0	Quinces 1 doz.	0	0	0	0
Cobs lb.	0	0	1	0	Raspberries lb.	0	0	0	0
Gooseberries quart	2	0	0	0	Strawberries per lb.	0	0	10	0
Grapes, Hot-house, lb.	7	0	10	0	Worms bush	10	0	10	0
Lemons 100	5	0	12	0	do. per lb.	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	8	0	4	0	Leeks bunch	0	8	0	0
Asparagus 100	3	0	8	0	Lettuce per score	1	0	1	6
Beans, Kidney 100	1	6	0	0	Mushrooms pottle	0	9	1	6
Beet, Red doz.	2	0	3	0	Must. & Cress, punnet	0	2	0	0
Broccoli hundle	0	9	1	0	Onions per bushel	3	0	5	0
Brus. Sprouts $\frac{1}{2}$ sieve	0	0	0	0	Parsley per sieve	3	0	4	0
Cabbage doz.	1	0	1	6	Parsnips doz.	0	9	1	0
Capsicums 100	0	0	0	0	Potatoes bushel	4	6	5	6
Carrots bunch	1	0	0	0	Kidney do.	4	0	6	0
Canflower doz.	2	0	5	0	Radishes doz. bunches	0	6	0	9
Celery bundle	1	6	2	0	Rhubarb bundle	0	4	1	0
Cucumbers each	0	6	1	6	Savoy doz.	0	0	0	0
Endive doz.	1	0	0	0	Sea-kale basket	0	9	1	6
Fennel bunch	0	3	0	0	Shallots lb.	0	8	0	9
Garlic lb.	0	8	0	0	Spinach bushel	2	0	3	6
Herbs bunch	0	8	0	0	Tomatoes per doz.	0	0	0	0
Horseradish .. bundle	3	0	5	0	Turnips bunch	0	4	0	6

TO CORRESPONDENTS.

*. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix upon the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

GARDENERS' WAGES NEAR LONDON (W. Amos).—It is quite impossible to give an opinion as to the probability of employment or the remuneration, so much depends upon the skill possessed by the applicant and other circumstances. You had better write to some of the leading florists and nurserymen near London.

HEATING A PINE PIT (Southerner).—By the same pipes you cannot regulate your heat—that is, you cannot have top heat when you like and bottom heat when you like, the one independently of the other. For this purpose you must have separate pipes for top heat, and separate ones for bottom heat, with valves to regulate at pleasure. For a Pine pit to be used continuously for Pines, or even for crops of Melons at times, but chiefly for Pines, the plan proposed is more simple, and does away with all valves and regulation, and as the water circulates all round for top heat first, before it enters below the bottom of the bed, you will always have enough and never too much bottom heat. It would be simpler still if you took two flows along the end, along the front, and along the other end, and then returned these beneath the bed for bottom heat. We have seen several pineries thus worked most successfully, and there is no trouble with valves or taps, therefore we say that the plan will answer. However, if you would rather have each set of pipes under control, that you can do with valves.

KEEPING LATE GRAPES.—OBTAINING A CONSTANT SUCCESSION OF GRAPES FROM TWO VINERIES (A Reader).—For Lady Downe's and other late Grapes to hang well until March, they should be perfectly coloured and pretty well ripened by the beginning of October. By having Hamburgs, &c., in your late house there may be a constant succession from two houses, a late and an early one; the Vines in the one forced early, those in the other forced little, but allowed to break naturally. A third house to come in between would give a better supply. There need be no difficulty as to the pruning of the late Vines if even the Grapes hang long, as the Vines could be disbudded when you could not cut, and all the disbudded parts removed when the Vines were in leaf, and they would suffer little or nothing. The Royal Ascot Grape bears out all that has been said in its favour.

GRAPES SHRIVELLING WHILE YOUNG (Rosslyn).—The young bunches were much dried up, but we could discover no traces of the Vine mildew. We think the shrivelling up of the bunches is owing to two causes—a heavy crop the preceding year, and unripeness of the wood, owing to the wet and dull autumn. The roots may also be getting deep enough. Give more dry heat to ripen the wood this season.

UNCOVERING AN OUTSIDE VINE BORDER (One in Perplexity).—Were we in your case, and the Grapes just beginning to colour, we would examine the outside border, and if moist enough we would let well alone, and allow the covering of leaves, &c., to remain until the Grapes were coloured. If the border was too dry we would clear a piece, water, and turn the covering over, treating all the border in the same way; but if moist enough we would let well alone for another month or six weeks.

CUCUMBERS NOT SETTING (For-man).—Cucumbers are so uncertain. We have eight or nine plants that would kill themselves with fruiting, we have several others doing little, though almost as old. Be content with 65° at night, give less manure, and be sure the roots are not dry at the bottom of the soil.

ZONAL PELARGONIUMS FOR EXHIBITION (Amateur).—Your compost is correct, but quite rich enough. Eleven-inch pots will grow a large plant, but if desirous of having the plants very large, shift them without delay if to be at the best in the beginning of August. The flat form of training will have the best effect; if to be seen with a face, we prefer the centre to be highest, and gently rounded so that the top shall be circular.

GROUND VINERIES (C. C.).—The proper width of a ground vinery is from 30 to 36 inches. In the first case the height at the ridge may be

16 inches, in the second it should be 20 inches. They are best made in 7-feet lengths, and they are cheapest if without bars or hinges. As regards cost, Mr. Rivers had a couple of 7-feet lengths of barless ground vineries, 3 feet wide, with two closed ends, painted and glazed with 21-oz. glass, for £1 19s.; so you can calculate what the foot will cost, and allow a little more for inexperienced workmen or carriage. As to position, the ground vinery should stand north and south, or nearly so, presenting one side to the morning, and the other to the afternoon sun. You will gain nothing by placing it against a wall. If you have a south wall you had better cover that with a fixed roof. Common slate will answer well for the bottoming of a ground vinery.

COLLYER AND ROBERTS'S TOBACCO TISSUE (G. F.).—We have seen Mr. W. Paul's and many other testimonials in favour of Collyer & Roberts's Tobacco Tissue. Those testimonials state that fumigation with it is quite efficacious in destroying both thrips and green fly.

HOTBED (R. W. H.).—Your note is an advertisement, and we have many similar, but are obliged to decline inserting them.

CELERIAC CULTURE (S.).—The cultivation of Celeriac is the same as that of Celery—that is, the seed should be sown at the beginning of March in a pot, to be placed in a mild hotbed or house where there is a gentle heat. The seedlings should be kept near the glass, and be well hardened-off, and when they have each a pair of leaves they should be pricked-out in a bed of rich soil. Shade from sun until the plants are again established, and water freely overhead every evening in dry weather. They should remain thus until they are of sufficient size for planting out. We consider it best to grow Celeriac in beds 4 feet wide, with 2-feet alleys between them, the soil being taken from the beds about 6 inches deep, and laid in the alleys, its place filled with well-rotted manure and leaf mould, and the bed dug over twice or thrice, so as to thoroughly work in and mix the manure and leaf mould with the soil. In this the plants should be planted in rows across the beds, six plants in a row, and the rows 15 inches apart. A good watering should be given, and when established a soaking of liquid manure may be afforded frequently, especially in dry weather. A little of the soil from the alleys may be put between the rows of plants from time to time, but the earthing altogether should not exceed 6 inches, as it is not the blanched stalks which are wanted, as in Celery, but the turnip-like portion of the stem, which is excellent for soups, and in every way better than Celery stalks. We have grown it many years. In severe weather it should be protected with dry litter.

CRICKETS AND SLUGS IN FERNERY (E. M. H.).—To destroy crickets, spread phosphor paste on slices of bread, and lay them down in the places the crickets frequent, and in the morning the latter will be found dead, and of a bluish colour. A sixpenny pot will clear your house. The best means of destroying slugs is to search for them after dark with a lantern, and they may by that means be destroyed, or fresh cabbage leaves may be placed at night near the plants attacked, and in the morning the slugs will be found under them. Fresh leaves should be used every night. Frogs are great devourers of worms, and of slugs occasionally. You might introduce a toad or two with advantage, so as to keep down woodlice. Neither frogs nor toads will do any damage to the Ferns. They are not vegetarians.

DYING PELARGONIUM LEAVES (A Young Gardener).—The leaves of Pelargoniums when dried retain their colours. The best means of drying is to place them between sheets of blotting paper, and press them gently. The paper should be dry, and changed every morning and evening, fresh or dry paper only being used.

TWELVE SELECT HEATHS (Idem).—Cavendishii, Gemmifera elegans, MacNabiana superba, Fernigiana major, Picturata, Obbatia, Massoni major, Shannoniana, Tricolor dulciflora, Ventricosa grandiflora, Willmorei superba, and Vestita rosea elegans.

THYSANOTUS GRANDIFLORUS (A Subscriber).—Thysanotus grandiflorus is not more tender than T. proliferus. Both succeeded admirably in an airy greenhouse, having a position near the glass. When growing it cannot have too much water, but when the foliage attains its full size diminish the supply of water, and place the plant in the full sun. In winter keep it dry but near the glass, but do not allow the foliage to perish prematurely from want of water. Keep it under-potted rather than over-potted.

WATERING ROSES WITH SOAPSCUDS (One to whom Water is an Object).—You may water your Roses, and indeed all kinds of plants, with soapy water from the bedrooms, but if from the laundry it must be used with caution, as it very often contains so much soda as to be injurious to vegetation.

LAWN BECOMING MOSSY AND COARSE (R. Ballbrook).—We would advise you now, in moist weather, to give the lawn a thorough scratching with an iron rake, and then put on a light dressing of very rotten manure. Afterwards give another good raking, taking off all the rough parts of the manure, and sow forthwith 4 lbs. of Snickling Clover, 4 lbs. Cynosurus cristatus, 2 lbs. Festuca duriuscula, 2 lbs. Poa nemoralis, and 1 lb. Lotus corniculatus minor for one acre. If the ground be full of weeds grab them up, and if full of tufts of coarse grass remove them, sowing twice the quantity of seed per acre; roll well when the ground is dry, and leave it untouched for a month, then keep it well mowed and well rolled.

DESTROYING WOODLICE (Mary Duer).—The best means of destroying woodlice is to place a boiled potato, with a little hay wrapped loosely round it, in a small flower pot. The pot may be laid on its side at night; examine it in the morning, and shake the woodlice into a bucket of boiling water. Another mode is to cut a large raw potato in halves, dish out the centres a little, place the pieces on the pots hollow side downwards, and so that the woodlice can get under. These pieces if examined daily will be found to have many woodlice under them. The baits will last a long time. A few toads placed in the house would speedily thin the ranks of the woodlice. They are difficult to poison. A little arsenic may be mixed with dry oatmeal and laid on pieces of slate near the places frequented, but poison requires great care. Be careful, and keep it out of the reach of domestic animals and fowls.

FLOWERING EUPHARIS AMAZONICA IN AUGUST (A Young Gardener).—The plants to bloom in August should now be repotted and plunged in a good bottom heat, encouraging growth by giving plenty of heat and moisture. This should be continued until the end of June, then keep dry for a fortnight, and it is likely the plants will show for bloom, when, of course, every encouragement should be given. Possibly the plants may show flower earlier; if so, they must be retarded, and if in a suitable-sized pot

we would not report them, but grow them on slowly, forwarding or retarding them as occasion might require. We could not well give a more definite opinion unless we saw the plants and knew when they last flowered.

BALSAMS AND CELSIOS FOR AUGUST-FLOWERING (*Idem*).—Now is the best time to sow Balsams to flower finely in August. The plants will be fresher in foliage and stronger in bloom than those sown in March. The Celosias are best raised from seed sown in March; but we would sow more seed now, and encourage the plant, making a selection of the best.

SELECT VARIETATED ZENAL PELARGONIUMS (W. H. M.).—Excluding the most expensive. *Golden*: Mrs. Pollock, Sunset, Sophia Cusack, Lucy Grieve, Lady Cullum, and Mrs. Benyon. *Silver*: Italia Unita, Argus, Beauty of Guestwick, Imperatrice Eugénie, Burning Bush, Silver Star. *Bronze*: Beauty of Oulton, Bronze Queen, Mrs. Longfield, Canary Bird, Luna, Circlet; but instead of these, if not too expensive, select some of the newer varieties.

ROYAL HORTICULTURAL SOCIETY (*Constant Subscriber*).—If you write to Mr. Richards, Assistant Secretary, Royal Horticultural Society, South Kensington, he will send you full particulars of the steps needful for

becoming a Fellow. The Secretary, Royal Botanic Society, Regent's Park, will also give you the information you need.

DOUBLE POLYANTHUS (*Felton & Holiday*).—This is one of the finest double flowers we have seen. In former days we used to see a double nearly black Polyanthus. This variety displays the crimson and yellow colours of the ordinary single flowers, which makes it very attractive. It will, doubtless, make a very fine spring decorative plant. We had 6d. to pay for the carriage of your parcel.

NAMES OF PLANTS (B. M. H.).—*Spiraea barbata*, sometimes called *Hoteia japonica*. (F. M. L.).—1, *Corydalis lutea*; 2, *Aubrietia deltoidea*; 3, *Pulmonaria officinalis*; 4, *Dielytra formosa*; 5, *Saxifraga cespitosa*. (G. R. F.).—1, *Anemone apennina*; 2, *Draba aizoides*; 3, *Phlox subulata*; 4, *Saxifraga cespitosa*; 5, *Doronicum caucasicum*. (J. L. L. W.).—*Escallonia montevideense*. (W. C.).—*Fuchsia splendens*. (*Ada*).—Better specimen needed. (*Natal*).—*Amayllis* sp.; *Cereus flagelliformis*; *Dendrobium nobile*. (*Senec*).—We have no specimen of a climbing plant either with the above signature, or with your initials, "A. F." (*D.*).—We cannot as yet discover the names of the Pine and Oak; should we succeed we will state what they are next week.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending April 28th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 22	29.709	29.567	61	43	52	49	S.W.	.06	Overcast, stormy; cloudy and boisterous; dark and stormy, rain.
Thurs. 23	29.578	29.512	60	44	53	48	S.E.	.00	Boisterous and overcast; cloudy; thunder, boisterous.
Fri. . . 24	29.541	29.474	51	42	53	49	S.E.	.06	Overcast; dull, cloudy; dark and overcast, rain.
Sat. . . 25	30.017	29.869	58	44	53	49	N.E.	.00	Overcast; clear and fine; fine, very mild.
Sun. . . 26	30.178	30.076	60	39	53	49	S.E.	.00	Hazy; overcast and cloudy; fine at night.
Mon. . . 27	30.120	29.990	61	36	53	49	S.W.	.24	Clear and fine; cloudy; thunder at 4 p.m.; boisterous with rain.
Tues. . 28	30.068	29.919	57	48	51	49	S.	.00	Cloudy; overcast; cloudy but fine at night.
Mean	29.887	29.772	58.28	41.00	52.57	48.85	..	0.36	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GAME FOWLS.

With reference to the two articles on Game fowls in your last Number, in which the name under which I write is mentioned, I reply as follows:—First, to Mr. H. Goodall, that if I were a Judge I suppose I should judge birds by much the same standard as the other Judges of Game fowls do, "by good shape and good feather." As to the exact shape of tails it is a matter of fancy, and breeders differ about it. I can only say that I much dislike the half-Malay-looking, large, drooping-tailed Game cocks and hens, "with their wings carried high up, half across their sterns like Geese, and the feathers of their tails all falling together on the lower feathers of the tail." I think such birds as these nearly half-bred Malays, and only fit for the spit or pot, as Mr. Goodall observes of the opposite style of birds. Mr. Goodall seems to forget that exhibition birds are rather of a different type from real fighting birds in many strains; and, I repeat, that the gamest birds are not our exhibition birds in general, but a smaller bird altogether, and that "a neat fanned," or "crest-fanned," spreading tail carried well up and not in the least broomy, is much the gamest form of tail, and shows none of the vile half-Malay type, and that a Game fowl should shield the fleshy part of his thighs with his wings, and not carry them on his stern as a Goose does.

Some of the boasted exhibition breeds and strains have been known to run away when tried with steel. Mr. Goodall's type of bird may be good birds, but are no better than those bred with the fanned tails carried well up. I am quite certain, in fact it is well known to almost all Game fanciers, that there are good birds with both forms of tail.

I have bred birds since 1831, when only eleven years of age, and never bred a cowardly cock once, and would warrant my birds to be gamier than any of the cowardly, great, coarse-boned, half-Malay type of Game fowls. The birds I consider perfection are in Brown Reds, Mr. Statter's, of Manchester (1); Mr. Fletcher's, of Manchester (2); and Mr. Aykroyd's, of Bradford (3); and in Black-breasted Reds, Mr. Brierley's, of Middleton (1); and Sir St. George Gore's strain (2). Such birds as these are fit both to fight and to exhibit, whatever form of tail they may present.

With regard to the article signed "CHALONER," I deny that anything erroneous has been advanced in any of my articles. I certainly was not aware that the cups at Birmingham were limited to stags, and consider it decidedly wrong to exclude the full-grown cocks from cups. I also confidently affirm, that the white-skinned birds have always possessed more courage and endurance, if well bred, than any of the "nasty yellow-skinned

exhibition things" we see at shows, which also put one in mind of the Malay type of Game fowls. I do not deny that good yellow-skinned Game fowls are often hotter in their nature than white-skinned birds are, but are never such keen birds, nor do they ever possess so much endurance as white-skinned Game do. As to the gipsy-faced birds, they are well known by most cockers to possess more endurance and hardness than any red-combed, red-faced birds ever do. I will back my own experience and judgment to the full against either "CHALONER," or Mr. Goodall, or Mr. Brown, of Perth, as I have made Game fowls one of my particular studies for many years of my life.—TREVOR DICKENS (NEWMARKET), *Markham Square, Chelsea*.

P.S.—Mr. Goodall makes an incorrect statement, when he says that I have advocated "droopings wings" for a Game cock, as I suppose it is well-known that a Game cock's wings can shield the upper part of his thighs without being either drooping or loose. I dislike drooping wings in a Game fowl, and they are only proper to Bantams. Mr. Goodall says he was "horried" to find two of his cocks that had broken out blinded and mangled. I do not think much of such slow birds as these. If they had been quick good birds they would have killed each other in a few minutes, instead of mangling one another.

I have never before heard of any good handler of Game cocks "using a stick or weapon of defence" to enter or open a pen with. Such a statement is absurd, and I would easily take the very fiercest Game cock out of his pen without any such nonsense, at the expense of a few blows from his beak on my hands, and have constantly done so with fiercer birds than Mr. Goodall has, perhaps, ever seen. Mr. Goodall can know but little about cockers' birds if he thinks that "exhibition birds" are the best specimens of "fighting Game cocks." Mr. Goodall's seem to be mere exhibition birds, and rather slow from his account.

I have also flatly to deny the statement made by "CHALONER," that my words formerly were that I could not see any beauty in any but Game fowls, for I stated in writing my admiration of Game Bantams, Bantams, Polish, and of several other breeds.

MERITS OF ANDALUSIAN OR BLUE MINORCA FOWLS.

HAVING kept poultry of various kinds for nearly fifty years, my experience may be useful to some of your readers.

Beginning with the common barn-door fowl, I afterwards kept Dorkings; but finding these too tender in rearing to be profitable, I tried some cross-breeds, the best of which I found to be that between Brahma Pootras and Dorkings.

After this I went rather extensively into the Cochins mania.

The Cochins, though good mothers, capital for sitting, eat too much, and lay too small eggs to be very profitable, besides the disadvantage of being inferior as chickens for the table. This objection also applies to the Dark Brahmans, which I next tried. Their being handsome and good exhibition birds is, in my opinion, their chief excellency.

Not being thoroughly satisfied with any of the above kinds for household and general purposes, I was induced, three years ago, to try the Andalusian, or Blue Minorca breed. Of these I cannot speak too highly; they are capital foragers, almost supporting themselves, excellent layers, their eggs being especially large and abundant, are very hardy, and though less frequently broody than other hens, are good sitters and mothers. They are first-rate birds for the table, being especially adapted for early spring chickens. I have taken considerable pains in selecting my stock, which is from Coles's breed, who was the original importer. To those, who, without being exactly poultry fanciers, keep a few fowls for domestic purposes, I can confidently recommend them.—EXPERIENCE.

THIS SEASON'S HATCHING.

I SEND you my experience in hatching this season.

On the 6th of March I put thirteen Dorking eggs under a Cochin hen, and on the 26th there were ten fine strong chicks hatched. One has since died, and two were unfortunately killed by a cat, leaving me seven, all healthy and very forward. On the 27th of March I purchased eleven eggs from a friend who keeps thoroughbred Partridge Cochins, and placed them under a Cochin pullet on the same day, and on the 18th inst. had again a brood of ten chickens, the handsomest and strongest I have ever seen. I expected these as in the previous case on the twentieth day of incubation, but no sign was visible of a chick making its appearance. I waited until the morning of the twenty-first day, but still only a chirp now and then could be heard inside the shell, no outward signs of life were visible. I then took away every egg and tapped them all round the larger end, until the shell was broken in two, and also cut the skin round the beak of the chick. I then replaced them under the hen for some hours longer, but no further progress was made. It was now high time I thought to get them out, which I did by first removing the shell of the larger end of the egg and then carefully tearing away the skin inside, and finally drawing each chick out of the last half of the shell. They seemed quite exhausted, but their animation was wonderful after they had been under the hen a little time.

It was now time to supply eggs to two more Cochin pullets, which I had in readiness for the result of this hatch, so I again visited my friend and procured all the eggs he had—viz., twenty, which I have placed under my two pullets, with two Spanish eggs added, to give them eleven each. But this time I have adopted a different plan in the arrangement of the nest, with a view to soften the shells and their inner lining. The nests are in boxes, perforated with large holes at the bottom; between this and the floor of the sitting compartment I have placed a turf which can be kept moist by moving the nest box off for a few minutes, and watering the turf. This will not disturb the hen or eggs.

It would be interesting to know how many eggs "Nemo's" friend placed under his ten hens, as I believe early hatches are often poor on account of too many eggs being placed under a hen. Eleven or at the most thirteen, are in my opinion quite as many as the largest hen can properly cover. When there are more, some are left partially uncovered at one time, and others at another, so that during twenty-one days it is very probable the whole of the eggs may have had a few hours cooling sufficient to destroy vitality.—GEORGE HASTLOW, 63, Albion Road, Dalston.

I FORWARD you my hatching results this season, as I think that I have no reason to complain.

February 27th, 7 hatched out of 13	March 15th, 10 hatched out of 13
March 4th, 9 " " 13	March 29th, 13 " " 15
March 12th, 10 " " 13	April 12th, 12 " " 15

—A. J. H.

HULL AND EAST RIDING SHOW.—The prizes are liberal, and are for Canaries, Rabbits, and Pigeons, as well as for the prime object—poultry. The names of the Judges, Mr. Hewitt and two others, are published, and as it is the day on which the testimonial to Mr. Hewitt is to be presented, we have no

doubt that the attendance will be very numerous. Entries close April 30th.

PACKING EGGS—HATCHING—BUCKWHEAT.

THERE is no question that our friend "Nemo" is correct in saying that packing should be tight. This is the essential, the next point being that the packing should be somewhat elastic. Attention being paid to these particulars, then moss, hay, bran, &c., will all do well. I have just received some Polands' eggs from Mr. H. Beldon, they were packed in oat husks; every egg is fertile. Pea husks I have also seen used.

Many of us, perhaps, err with early chickens in being too grasping, and placing thirteen or more eggs under a hen: this is often fatal to all. I am disposed to think that Cochin and Brahma eggs are less fertile than those of most other breeds; there are reasons for this, I fancy. In cold weather the eggs are not only more easily chilled while hatching, but are often ruined before they come to the nest, if the temperature be very low. It is notorious, probably in everything as well as our hobby, that if a thing is worth anything, the necessary trouble to get it is vastly greater than when the reverse is the case. The cottager's wife sits her hen on any eggs in any place, giving her any number of eggs. I have often heard of eighteen or twenty as a nest. Having given her hen a nest, and seeing that she has food, her clucking pet may do just as she pleases, but somehow the results are good, and very few eggs fail to hatch. I have known eighteen to hatch. We are, perhaps, extra careful, less grasping, &c., but success wholly eludes our efforts. Of course, the successful old dame says it is all our fault; still I personally feel better satisfied when I am certain that the hen is let out at stated intervals, that no egg is broken, and that the eggs are occasionally damped. It is, perhaps, more consolatory to fail after having done all you can to secure success; at least, I find it so.

I will also add my testimony to the value of buckwheat. The poultry like it, and as my experience goes, do very well on it. I wish I could obtain it more easily than I do.—Y. B. A. Z.

FROSTERLEY POULTRY SHOW.

The fourth annual Show of the Frosterley Poultry Society was held on April 11th, when the following prizes were awarded by the Judge, Mr. J. Simm, West Crumlington.

SPANISH (Black).—First, R. Pickering, Miln Houses. Second, R. Wall, East Layton.

SPANISH (Blue—Andalusians).—First, M. Reid, Bishopley. Second, C. Maddison, Frosterley.

DORKINGS.—First, J. Graham, Mac Neil. Second, Mrs. Sanderson, Bradley Hall.

COCHIN-CHINA.—Second, R. Wall.

GAME (Black-breasted and other Reds).—First, J. Dobson, Sunnyside. Second, Messrs. Emerson & Gardner, Hill End.

GAME (Duckwing Grey).—First, M. Frankling, Goose Croft. Second, D. Watson, Batts.

GAME COCKEREL.—First and Second, J. Fenwick, Stanhope.

GAME COCKS.—First, J. Graham, Mac Neil. Second, R. Wilkinson, Shillehouseside.

HAMBURGS (Golden-spangled).—First, R. Pickering, Miln Houses. Second, E. Pickering, Bishopley.

HAMBURGS (Silver-spangled).—First and Second, J. Taylor, Middle Bishopley.

HAMBURGS (Golden-pencilled).—First and Second, M. Ridley, Peak Field.

HAMBURGS (Silver-pencilled).—First, M. Armor, Frosterley. Second, J. Taylor, Middle Bishopley.

POLANDS.—First, C. Maddison, Frosterley. Second, Miss E. Johnson, Frosterley.

GAME BANTAMS (Black-breasted and other Reds).—First, M. Ridley, Peak Field. Second, W. Brown, Stanhope.

GAME BANTAMS (Any other variety).—First, S. Pennington, Low Biggins. Second, S. Maddison.

DUCKS (Aylesbury).—First, Mrs. Sanderson, Bradley Hall. Second, R. Pickering.

DUCKS (Any other variety).—First, W. Simpson, Fry Close. Second, W. & H. Thompson, Ferry Field.

DUCKS (Black Indian).—First, R. Pickering. Second, M. Reid, High Bishopley.

GANDER.—First, J. Dobson, Sunnyside. Second, M. Reid.

BIRMINGHAM SHOW.

A SPECIAL meeting of the Council was held on Thursday last, at the Queen's Hotel, the Earl of Bradford (President) in the chair, to make arrangements for the exhibition of the present year: which was fixed to commence on Saturday, November 28th, and to terminate on the Thursday following.

The Honorary Treasurer (Mr. Shackel) read a report, in which he expressed regret that the transactions of the last year showed a balance against the society of £178 13s. 10d.; but he added that a considerable amount (£150) had been spent in making additions to the working

stock. The reserve now stood at £560 3s. 1d.; and the balance due to the bankers on the current account was £225 7s. 6d., leaving a net balance in hand of £334 15s. 7d. The Society now possessed 2,700 poultry pens, 500 iron hurdles, and other movable stock to the value of at least £1,000. The cattle salesman had been dispensed with, by which they had been relieved of a considerable expense, without, as it was believed, inflicting any inconvenience upon exhibitors. On the motion of Mr. C. M. Caldecott, seconded by Mr. Councillor Lowe, the report and accounts were received and adopted, the latter gentleman suggesting the desirability of some statement showing the original cost and present value of their stock, in order that the Council might know their actual financial position.

Mr. Shackel also presented the following comparative statement of the admissions to the show, and the cash taken at the doors, since the year 1863:—

Year.	Admissions.	Cash at doors.
1863	61,530	£1,216 17 3
1864	62,533	1,334 4 4
1865	41,844	934 10 0
1866	21,511	648 3 0
1867	43,540	979 0 0

In reply to Mr. Luckcock, Mr. Shackel said that in 1865 the amount received in subscriptions was £1,175; in entrance fees, £176 10s.; in 1866, subscriptions, £1,468 10s.; entrance fees, £317; and in 1867, subscriptions, £1,558; entrance fees, £463.—(*Midland Counties Herald*.)

PARIS POULTRY EXHIBITION.

THE Acclimatisation Society of Paris has just held another poultry show, at which some of our English varieties were fairly represented, and a few notes may not be uninteresting. Of European reputation as an ornithological and practical establishment, the gardens of the Society in the Bois de Boulogne are too well known to need description, and it will suffice to say that they are the favourite resort of many thousands of Parisians, and nearly all the visitors to the capital. The space allotted to the poultry Show was near the conservatories. The pens were erected in three tiers, and placed back to back, all being covered with an awning, which did good duty against both wind and sun.

As a matter of course, the principal French breeds were more strongly represented than any others, although there was a large class of Cochins and Bantams.

First on the list were birds of La Fleche, and as a class they were thought so highly of by the Judges, that seven prizes were divided among them. In quality the class was excellent; but to pick out a pen to win, we think we could find one in England of imported birds that would run any in the Show very hard.

The Crève-Cœurs were numerous and excellent; they numbered more than thirty pens, and counted hardly an inferior one among them. In shape and symmetry some of the winning birds were remarkable, and they must have been very heavy. There were shown some of this year's chickens, strong, healthy, and well-developed; but as there was one class only for the breed, they, of course, stood no chance.

The uniformity of the type of the Crève-Cœurs spoke volumes, and formed a remarkable contrast to the Houdans, which were next to them. Three dozen pens presented a great variety of shades of colouring, shape of top-knot and comb, and colour of leg, but with hardly an exception every bird was five-toed. This breed appears now to be exactly in the same condition as that of the Crève-Cœur was some eight or ten years ago, before there was any demand for export. There is the breed, and some of the points are indispensable, but the others are left to the caprice of the amateur. There were not wanting at the Show many amateurs who appeared to understand the birds, who did not fail to say that the pure *poule de Houdan* should have no heard; the Judges thought otherwise. In comparison with the Crève-Cœurs, the average size of the hens at the Show would be about one-fourth less, and the difference in size between the cocks of the two breeds immensely in favour of the Crève-Cœurs.

The other French breeds demand little notice, and have nothing whatever to recommend by size or appearance. The breed *Le Maus* would pass either for Minorcas or Black Hamburgs, according to the choice for comb.

The much-vaulted *poule de la Bresse* has the appearance of being a decided mongrel. One breed, however, especially French, claims honourable exception, that of the Padones—White, Chamois, Herminés. In beauty, symmetry, and size of top-knot, they far distanced the Golden and Silver-spangled Polands with which they were associated, and were deservedly awarded a *prix d'honneur*. An English exhibitor, Mr. Beldon, had a second prize for a pen of Silver-spangled.

The Brahma Pootras are favourites; but the French idiosyncrasies are very much the reverse of ours. With the exception of one pen, all the birds exhibited were enormously vulture-hooked, all single-combed, and birds of the Light variety, but with more colouring than we should allow them. As regards the vulture hook, the same remark applies to the Cochins, all the French birds competing possessing it in a remarkable degree. There were some excellent Blacks, unusually large Cuckoos, indifferent Whites, and twenty pens of Buifs, in which size was the principal quality.

The competition in Dorkings was not great; Messrs. Bailly, of

London, took both prizes. Spanish fowls never were favourites in France, and show no signs of progress in public estimation. The four varieties of Hamburgs were represented well as regards quality, and some of the birds would have stood their ground fairly in English competition. The prizes were taken by Messrs. Beldon, Bailly, and Pickles, of the English exhibitors, and Mr. Boquet, of Paris. The Black Polish were few in number and low in quality. The Sebright Bantams mustered sixteen pens, and the first prize for Silver went to the largest birds, one of the hens having a single comb. The Game Bantams were few; Mr. Ledger was first, Mr. Boquet second. The little Japanese Bantams seem to be favourites in France, and were much admired. The Black, White, and Cuckoo Bantams call for no special remark. The wild Turkeys were of unusual excellence; the Black, White, and Grey inferior.

In the class for Pheasants were Kaleege, Chinese, common, and Versicolor, and two curious cross-bred birds. The Ducks and Geese call for no special notice; they were poorly represented in every way, and, with the exception of one or two good Rouen Drakes, showed very little quality. A pair of Curassows and a pair of little Bustards deservedly attracted much attention.

The exhibition of Pigeons, with the exception of one or two varieties, was not good. There were some excellent Runts; but the first prize was given to a very inferior pair of Blacks, to the prejudice of good Blues and Silvers. This was the only variety represented in any numbers. The Rabbits are always favourites in France. In the variety "Belier," one exhibitor had it all his own way, and sold all his Rabbits at very high prices. The Silver-Greys and Himalayans were good, and the Angoras pretty. The arrangements of the Administration, and the care and attention bestowed on the birds, reflected the highest credit on Monsieur de St. Hilaire and his assistants, and entitle them to the warm thanks of all the exhibitors.

A GUIDE TO CANARY-BREEDING.—No. 5.

I MUST apologise to the readers of the Journal for to some extent repeating in my last article a portion of the previous one—a mistake which arose from my mislaying a sheet of my manuscript.

By this time the nest of birds which chipped a fortnight ago will be almost as large as their parents; and the hen will most likely be making preparations for a second family, paying less attention to the nestlings, and leaving them in a great measure to the care of the cock, who will be unceasing in his devotion to them, his entire time being taken up with alternate visits to the egg box, the green food, and the nest of clamorous gluttons, each trying its utmost to establish its claim to the right of being first fed—their uproarious proceedings sometimes driving him away from the edge of the nest, only to return shortly, nothing disconcerted, to parcel out to each his mess of pottage with scrupulous impartiality.

When the hen is observed to be restless and carrying about such building stuff as she can procure, another nest box and a supply of fresh material must be introduced. Care must now be exercised to prevent her plucking the young birds, a misdemeanour she is too frequently guilty of. Should this be the case (and when the plucking once begins it does not require long to metamorphose a well-fashioned bird into a "raw gobby," as we called unfledged nestlings in our birdsnesting days), remove the young ones at once to a nursery cage, which must be suspended against the wires in the front of the breeding cage, when the feeding operation will be carried on through the wires, being careful to make the spaces between them of such a width as will conveniently admit the head but not the shoulders of the birds.

A supply of soft food will encourage the young ones to pick for themselves; and as soon as they can accomplish this most desirable object transfer them to a large "flight" cage, and gradually wean them from soft food to hard seed, which they soon manage to crack. Each succeeding nest must undergo this weaning process previous to being put with the others in the flight, as it will not do to give them other than hard food then. Keep up a good supply of fresh green food, such as chickweed, groundsel, shepherd's purse, plantain, &c., and allow a free use of the bath. It is a good plan, when the hen begins to lay a second lot of eggs before the young birds in her first nest are very forward, to remove these with the cock into the flight. He will not fail to single out his own, and feed them assiduously, besides doing an occasional good turn where it may be required.

There are a few operations which have been overlooked in their proper place.

If a felt nest be used, it is often desirable to change it entirely as soon as the eggs are all chipped, as the red mites will have made their appearance in greater or less numbers under-

neath it and at the back of the tin. If they show in numbers change the nest every morning, simply turning the young birds from one to the other. As they grow and fill up the nest a No. 2 must be substituted, affording more room, and if there be four or five birds this must be followed by a No. 3. They feather better, and are in many respects more comfortable in the larger nest.

It will occasionally happen that a hen will refuse to feed her young, sitting very closely and "sweating" them. This unnatural conduct on the part of his spouse seems to distress the cock exceedingly. He will sit on the edge of the nest, apparently remonstrating with her, and using his most persuasive eloquence to induce her to allow him to perform the duty she neglects, looking round and round the nest, anxiously trying to discover if there be a little head peeping out from underneath the hen. Should he be fortunate enough to find one, with a gentle tap he reminds the half-starved thing of his willingness to give it a meal, and in an instant the little mouth is gaping wide to receive the choice morsels, which, after all, are only too frequently swallowed by the cruel mother, whose appeals he never refuses. There is no cure for this. It is the result of a diseased condition. By driving the hen from the nest at frequent intervals, and allowing the cock to feed them, the little things may now and then be kept alive till the hen is disposed to attend to them herself; but by far the better plan is to remove the neglected youngsters at once, and place them under a nurse. It is very important indeed to have a few hens, well-domesticated matrons, whose eggs you may not hesitate to sacrifice in favour of more valuable stock. Many a valuable nest is saved in this way, and I know nothing more trying to the patience than, after waiting for the chipping of a choice nest, to find them apparently better than your anticipations, and yet dying off one by one from sheer want. They may be assisted by hand, and are occasionally reared in this way, an unusual amount of sympathy being evinced towards the little unfortunates, receiving attentions which would at another time be thought tedious. Feed with yolk of hard-boiled egg, moistened with a little lukewarm water, given on the end of a quill, the rule being, little and often.—W. A. BLAKESTON.

THE HONEY BEES OF CEYLON.

I AM indebted to a gentleman engaged in the civil service at Point de Galle for the following very interesting paper from the pen of a native headman on the honey bees of Ceylon.

The first species described is probably identical, or nearly so, with the very diminutive and harmless *Apis florea*; the second and third I should imagine to be varieties of *Apis indica*, the two kinds found in one hive at the same time being, of course, drones and workers; whilst the fourth would seem to be the magnificent but bellicose *Apis dorsata*, an attack from which proved fatal to Mr. Boddington, the unfortunate English engineer who jumped into the river Nerudda, and was drowned in endeavouring to escape from his enraged assailants. It was, I believe, a swarm of these bees which put the late lamented Lord Clyde and his entire staff to the most ignominious rout, and thus inflicted the only defeat which that gallant officer sustained during his final campaign against the Indian mutineers. Another remarkable instance of their ferocity was related in page 56 of our Journal; and I am informed by Mr. F. Smith, of the British Museum, that Dr. Jerdan states that he has lost a valuable dog through an attack by these insects, and that fatal accidents from the same cause are not unknown among the natives.—A DEVONSHIRE BEE-KEEPER.

REMARKS BY JAMES DE SILVA, MOHANDUM, OF HINDEDOOM PALTOO, IN THE SOUTHERN PROVINCE.

In Ceylon there are four varieties of the bee kind yielding honey.

1. *The Canemerya Masso*.—These resemble the common house flies, but are smaller. Hives are always formed in hollows of trees, with an outer covering for the protection of combs, which produce very little honey. It is of an agreeable odour, tasting very sweet. Besides the honey there is an eatable substance of a yellow colour, called *hackeroo* (jaggery), in taste resembling a mixture of sugar, flour, and an acid, which is glutinous, and not very agreeable. When a hive is molested this bee inflicts very little pain by the sting, but causes much annoyance by attempting to get into the ears.

2. *The Dandoowella Masso* (dies), resemble the bee, with an additional greenish streak lengthwise on the body. The hive

consists of a single round comb on some slender twig of a tree, and the honey is scarcely different from the bee honey.

3. *The Bee*.—Of this there are two varieties, the one of a brown colour and smaller than the other kind, with little honey; the other blackish and of larger size, with honey always in combs, though there is very little when out of season. Some, however, say there is only one species: the black colour and large size are to be ascribed to the bees being well fed, or they are the latest brood, which latter, I presume, to be correct, as both kinds are to be found in one hive at the same time.

When bees have remained for several years in one hive a species of winged insect, like a beetle, appears, which is a sure sign of the bees abandoning the hive.

Some people are very expert in finding out bee hives. They observe early in the morning a tree in blossom which bees frequent, and the uninterrupted arrival and departure of the bees guides the individual to the hive. I know an instance in which a man followed a hive of bees for two days (returning home in the evening), till he reached the hive.

In hives near the sea there is scarcely any honey, which, perhaps, arises from the want of substance to form honey, and the sting is more painful.

4. *The Bambaroo*.—This is about twice the size of an ordinary bee, and forms only one comb in the hive, which is to be found in some branch of the loftiest tree in the forest. As regards the colour of the body, the half near the sting is a deep black, the other half inclines to brown. The honey is thinner and more transparent than the bee honey, but not so sweet.

The mode of procuring it is to smoke the hive, when the mass rises to a great height in the air. During this short space of time, before the bees return, the party must be off, for if found they will be stung to death, and I know an instance where a party of six individuals was pursued more than a mile, and was obliged to dive under water, the Bambaras hovering all the while till they saw a head above water. Some of them are so tenacious, that although a hive should be burnt they will not quit it.

The quantity of honey found in the largest bee hive to my knowledge is one and a half gallon. In the Bambaroo I am unable to state the quantity, but it must be very considerable.

Bees form hives in vessels kept for the purpose, and no other kind would sit in an artificial place. The sting or point of the Bambaroo is so sharp that it would cut through the thickest cloth.

SUPER LEFT ON A HIVE.

Last summer I found the super on a hive to be but partially filled with honey. Thinking my bees might starve in the winter, I left it. Ought I now to remove it, or leave it? If I leave it, can I put another super at the proper time by the side of the other, instead of at the top, making a communication at the back?—T. T.

The super may now remain, but we doubt if the bees will take possession of another on the same level, unless direct communication be afforded with the stock hive.]

OUR LETTER BOX.

SELLING BOILED EGGS (*Cestrie*, and many others).—Our correspondents all complain in no measured terms that "J. L. L." has not published the name of the vendor; but there are many considerations requiring attention before such a course is adopted. "J. L. L." at all events, has put purchasers on their guard.

EGGS FERTILISED *Lemon Buff*.—Two days are sufficient if the cock takes to the hens.

APIARIAN SOCIETIES (N. M. C.).—We know of no such societies, and believe that none exists.

WOODEN HIVES SMELLING OF TURPENTINE (*J. Bryan*).—Expose the hives as much as possible to the sun and air before using them, but avoid dressing them with anything.

BUCKWHEAT AS A BEE FLOWER (*T. B.*).—There is no doubt that it yields a large harvest to bees. Germans are exhaustive on all subjects they examine, and one of them estimates that an acre of buckwheat yielded 14 lbs. of honey daily. Single hives gathered 3 lbs. on favourable days.

HEN CANARY WHIST SITTING (*C. A. J.*).—"I do not allow my hens the use of the bath while sitting, because I am of opinion that at such a time it is well to hold out as little inducement as possible to leave the nest. So far as regards any injury which might result to the eggs from the hen giving herself an occasional wetting, I should have little fear. I use open drinking vessels. I do not recommend them, but having a stock make use of them; and it will often happen, on replenishing the water, that a hen will wash as freely as she can through the water hole, and quite well enough to thoroughly saturate her breast, but I have never known any evil results to follow."—W. A. BLAKESTON.

WEEKLY CALENDAR.

Day of Month	Day of Week	MAY 7-13, 1908.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year		
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.			
7	Th	Meeting of Royal Linnean, and Chemical Societies.	59.6	39.3	44.5	18	23	4	39	47	17	45	15	3 39	128
8	F	Meeting of Royal Institution.	61.7	39.4	50.5	18	21	4	32	7	22	9	16	3 42	129
9	S	Royal Horticultural Society's Azalea Show	62.1	39.7	50.9	18	20	4	33	7	18	19	17	3 46	130
10	Sun	4 SUNDAY AFTER EASTER.	61.9	40.1	51.0	19	18	4	35	7	11	21	18	3 48	131
11	M	Meeting of Royal Geographical Society.	62.1	40.5	51.4	19	16	4	37	7	55	11	19	3 50	132
12	Tu		62.9	40.6	51.8	19	15	4	38	7	morn.	59	20	3 51	133
13	W	Meeting of Royal, Agricultural, and Microscopical Societies, and Society of Arts.	63.6	39.1	50.9	19	13	4	40	7	33	0	21	3 52	134

From observations taken near London during the last forty-one years, the average day temperature of the week is 62°; and its night temperature 39.7°. The greatest heat was 82°, on the 7th, 1867; and the lowest cold 21°, on the 6th, 1855. The greatest fall of rain was 1.14 inch.

PEACH CORDONS.



THANKS to Mr. Rivers and to Mr. Fish, we have some reliable data as to the periods of blooming and the setting of the fruit in unheated orchard houses, whether span-roofed or lean-to.

The trees in our houses here were at their fullest bloom early in March—not by any means a very early date, especially after so mild a winter—and so they were about a fortnight in advance of those in the house at Luton, and in that at Sawbridgeworth. The first-mentioned is a lean-to, and the second is an elegant span-roofed house, glazed to the ground. Thus a lean-to at Luton is a fortnight later than a similar house in Guernsey, and a span-roofed house at Sawbridgeworth is about equal in point of blooming with a lean-to at Luton. This confirms our former experience that Guernsey is from eight to ten days earlier in Peach-ripening than Sawbridgeworth. We want further data respecting the blooming in other unheated orchard houses still further north, and some from the extreme south of England. We also need information as to the approximate limit of successful out-door cultivation of the Peach (any sort) northward of London, likewise how far beyond this limit a solid lean-to will enable Peaches to be ripened. For all these purposes of comparison there is in every way no fruit equal to the Peach. I do not think that these matters, so useful to the intending builder of orchard houses, are at all sufficiently established. Information can be had, and very excellent it is, nevertheless it cannot be so common as it might be, nor can it be final.

With respect to partially-heated orchard houses—that is, where fire heat is used only to keep out frost and to aid the setting of the fruit—it would be most interesting to know clearly how little would effect this in different localities.

An orchard house of the modern style, with abundance of cheap glass, filled with cordons of a hundred varieties of Peaches and Nectarines giving a length of season undreamt of formerly, and with rows of closely-pinched potted trees in the front, if it have a due or a row of pipes as an adjunct merely, is a very different matter from the forcing Peach house *par et simple*, as the French say. One great and distinctive feature of the orchard house of the present and of the future is the adoption of the cordon system of training in its several forms. Nothing can equal this style for simplicity and for productiveness. On these two important points even its detractors are agreed. Those who, like myself, have practised it for some fifteen years on the open wall and under glass care for nothing so much, but it is for trees in a good-sized orchard house that it is specially suited.

I have just finished the second thinning of my trees, and being unable to trust this delicate matter out of my own hands, it has been rather a toil in the heated atmosphere. How could this be left to others, when half a dozen large and established trees in full bearing were destroyed by the

violent application of tobacco smoke? So this fatiguing process of thinning was a personal matter. The bloom, as said previously, was profuse, and was at its maximum about the 1st of March, lasting, say, for three days in its fullest beauty. Certainly the rows of cordons on the wall, regularly defined, were very lovely. The large flowers of Rivers's Orange and Stanwick Nectarines were eminently attractive, while those of deeper hue, like the Honey Peach, were readily distinguished. Perhaps as beautiful as any was the large, very pale-petalled Noce Bianco, a new clingstone Nectarine of doubtful merit. An unnamed seedling Nectarine from Mr. Rivers was equally remarkable. The bloom in a large orchard house is always a sight.

Our Peaches rapidly set. By the middle of March each little fruit was clearly discernible. By the equinox the tender shoots were several inches long, and by the end of the month were crowding, but I never disbud.

As April went on thinning became necessary, and few matters in orchard-house culture are so important or so difficult. In the first place, as nothing exhausts the vitality of trees so much as profuse blooming, it is obvious that thinning this bloom would be a relief to the tree, but it is not always easy to decide, and should the weather prove unfavourable it would be perilous. We must, therefore, abandon the thinning of the bloom of Peaches to theorists. Better to wait a little longer, and commence soon after the setting. Even this is a very hazardous operation if done too early: the unskilled should wait a week longer, or till the fruit is as large as a bean. Then comes the trial of one's knowledge: we must weigh so many things. What crop did the tree bear last season? What is its age and vitality this season? What sort is it? What do we require for our own purposes? Nay, even what shall we impose on the tree to satisfy the unlimited demands of ignorant visitors? And so we should never commence till we have given a careful glance all over the tree. If we find all the best fruit crowded near to the summit we know that something is wrong with our culture, but we must, nevertheless, apportion this irregular crop according to some of the reasons just mentioned. A strong reluctance to thin at all seizes most of us at this moment: indeed, many succumb to its influence altogether.

My own diagonal cordons—of which readers of this Journal have often heard I fear, but they are most worthy of note just now—were in general regularly covered with fruit from top to bottom. Often a dozen finely-grown fruit clustered on each spur and its group of shoots, but as these are now like miniature trees in 5-inch pots this was not remarkable, only the whole tree could not bear such crops as one potted tree might. But what matters a potted tree? It is easily replaced, and may exhaust itself if needed, but not so these magnificent cordons destined to last for years. These have now reached the roof, and are at least 20 feet long, and as each alternate cordon is advanced 18 inches from the back wall, is about the same distance from its neighbour, and has shoots all round the lower part of the tree (which lowest shoots are kept very strong). One can easily see how such a cordon occupies an unusual

space, and that each is really as vigorous a tree as a moderate-sized fan-trained tree.

Commencing, then, from near the roof, I look down on hundreds of healthy young Peaches or Nectarines on each cordon. How absurd seem objections to this mode when such practical results are evident. Below me I see my spiral cordons, already 12 feet long in their twist, and having some 3 feet more to ascend. These are young, and this first season bear well; but further on is a row of fine pyramids two years plunged in the border. A great mistake! These are growing too strongly, and I can see even now will require very little thinning. This may be a hint to others. As long as these were in their pots they bore fairly, and were easily enough restrained; but now, left to themselves, they must soon become tedious to train.

Between my groups of spiral cordons are some very fine standards; these are really more manageable, but would soon become huge trees if left alone. I can see that all their extensions are "gross shoots," and, further, the shoots growing inwards below these are equally strong. As the fruit grows most on rather weak branches this tendency is objectionable, especially here; nor is the fruit on these, though very good, so numerous as on the cordons. These were really troublesome to thin; at last I used to rub them off without looking at them. As to the spiral groups they are very accessible. About two-thirds of the whole crop were removed at this first thinning; in a fortnight afterwards a second severe removal took place. Now all was easy, because many Peaches remained small, and were at once taken away. This difference in size is not accounted for by imperfect development alone. Here, for example, at one extremity of this house are two trees trained in the fan form—one an Elruge Nectarine and the other a River's Orange. Both are of the same size, both sorts naturally set equally well, but the tree which has now the most advanced fruit is that which has had the most watering. Thus I conclude that Peach trees require free supplies of water during this exhausting period, and it is just what Nature would give them, for, as I write, nearly 1 inch of water has fallen in the twenty-four hours, and it blows so hard that the mails are delayed.

I cannot resist adding a word more as to the progress of the spiral cordons also. Though these are several feet from the back wall, so much is gained by the twist that a length of fully 20 feet will be required before they reach the glass. As they are planted 16 inches apart in groups of five, and the shoots grow freely all round them, any one may estimate the proportion of heating space they occupy. In no other way—and this is important—in no other way can this be so well effected, taking into consideration quality, quantity, and variety of fruit. If this be really the case, then, who can doubt the ultimate universal adoption of the method in orchard houses? A cordon of this size when full grown can bear as freely as a moderately large wall tree, and if carefully thinned, need never have any rest such as potted trees require. These groups should alternate with standard or potted trees, so as to secure free access of sunshine to the lowest parts of the back wall in a lean-to. In a span-roofed house facing north-east and south-west (as such houses should face), this is of less importance.

I have sometimes alluded to the house of a friend and pupil, as he genially writes: could some who read this Journal see his 600-foot houses, all trained with diagonal cordons parallel with the houses, they would learn something new. After all, if we do spend so much time and money on these things, we may as well adopt the most advantageous plans, and this many well known in these pages have now decided on doing. Our poor pyramids are to be soon "disestablished."—T. C. BRÉHAUT.

BEDDING PLANTS

THAT MAY BE PLANTED OUT EARLY, AND OTHERS TO BE PLANTED LATE.

THE lesson taught us last year as regards planting out too early, is not likely to be forgotten by those who were sufferers; nevertheless, there are some plants so much harder than others, that they may be planted early without sustaining so much injury from cold as they would from other causes if kept in their present quarters. Such plants it would be advisable to plant out as early in May as possible, consistently with the state of the weather, the condition of the ground, and, more important than all, the condition of the plants themselves; therefore, where there is an opportunity, let no time be lost in planting them out, at the same time take care not to proceed far in adopting the same course with others which are

too tender yet to be trusted out of doors. A few notes on such plants as may be first removed to beds out of doors, as well as on those that had better remain in their sheltered quarters some time longer, may be useful at the present season.

Commencing, therefore, with such as will bear a tolerable amount of cold, the first on the list is one of the most popular plants of the parterre, and inapproachable, as yet, in one of the colours it represents—I mean the *Calceolaria*.

CALCEOLARIAS.—Assuming the plants to be in some cold pit, and not in pots, but growing in the pit, most likely if tolerably close together they will be drawing each other up, and running into flower, even if they have been partially thinned, as mine were, in the early part of March. At that time, in my case one half of the rows were taken out and planted elsewhere under shelter, but those that were left grew out and occupied all the space, and after April 20th commenced running into flower. Many of them I had removed into their permanent quarters before the end of the month, taking advantage of the dull, moist weather that occurred during the interval to perform the operation. Those which were transplanted I need hardly say were not so forward, and, consequently, not in such need of immediate removal; and if there had been an opportunity to transplant the whole, they would, of course, have been later, but it not being convenient to do so, and as *Calceolarias* have on former occasions done pretty well when planted early, the trouble of an intermediate transplantation was avoided. Of course, those who have the means and accommodation to give their plants more room, need not plant so soon, and may possibly benefit by the delay; or where *Calceolarias* form a portion of a bed, along with other plants which cannot be planted out so soon, in that case delay must take place; but when practicable, and where the plants have been well inured to the open air beforehand, they may often be planted out much earlier than they are with advantage.

GAZANIA.—This is also a hardy plant compared with many, and I usually treat it the same as the *Calceolaria*. Cuttings put into a cold pit in the last week in September, make excellent plants, bushy and well rooted, by the end of April, and they may then be planted in their summer quarters. Usually the *Gazania* likes a rather dry situation, and looks well hanging over the sides of some raised bed or vase, the plant requiring a less amount of soil to grow in than some of the *Verbenas*, which it resembles in habit, but in no other particular. The *Gazania* is, however, not a hardy plant, and will not bear so much cold as the *Calceolaria* and *Nierembergia*, but it has the property of resisting damp, and transplants well.

CERASTIUM.—Perhaps this plant ought to have preceded the *Calceolaria*, as it is much hardier—in fact, is a hardy plant, and in a dry situation will withstand any ordinary amount of cold, but a wet winter is fatal to it, and in the spring of last year it was very scarce. Where, however, plants are at command, it is a good plan to make fresh plantations of it early in April, and as it is mostly used for edgings, it can often be put in its place without interfering with the planting of other subjects afterwards. Certainly it would be better to have the whole of it planted during April, as it will then have a good start, and show itself earlier in the season.

CINERARIA MARITIMA.—Unfortunately it is not always that good rooted cuttings of this *Cineraria* can be had early in the season, otherwise there is no reason why they should not be at once planted, but it would be better to wait until such cuttings were well rooted before planting. We have for some years put in cuttings a little before those of the *Calceolaria* in autumn, and they have made tolerably good plants, but not early ones, and it is not advisable to remove them until they are well rooted. We have occasionally taken up old plants, and by pulling them to pieces have sometimes met with nicely rooted offsets; but these, unfortunately, so persistently run to flower and seed, that they rarely look well, and seedling plants, though perfect paragons of health and compactness, are invariably of a bad dull green colour: so that after trying many modes of growing this plant, we have found out that autumn or early spring-struck cuttings are best, when allowed to root well before planting. It must be confessed they are not so early as could be desired, at the same time they are not so apt to run into flower as when made earlier, which is unfortunately too apt to be the case with this otherwise useful plant. Its hardiness is well established.

VERONICAS of the New Zealand shrubby race, especially the variegated, are popular plants, but are less hardy than the plant last named; the variegated one, however, will bear the ordinary treatment of *Calceolarias*, and may be planted out at

the same time. It has the merit of being less liable to revert to the green condition than most variegated plants which I know, is not easily affected by disease, and is otherwise a useful ornamental plant. When it is also considered that no pots are wanted for it at any time, its utility to those whose accommodation for tender plants is limited is very great. It will do planted out at the end of April.

GOLDEN SAGE.—This deserves to be more generally grown than it is, for it is not very particular in respect to soil and situation, but the more it is exposed to sun the better it is in colour. The plant is as hardy as the common Sage, but it should not remain longer than two years, otherwise it becomes unwieldy, and, perhaps, some of it may die off. It makes an excellent edging around shrubs, and is in many respects a plant deserving of attention. Its liability to flower is not so great a drawback to it as to the *Cineraria maritima*, or *Centaurea gymnocarpa*, and it looks well during the winter, but is not so yellow as when the growth is in a younger condition.

DACTYLIS GLOMERATA.—This Grass, though hardy, is somewhat liable to die off during the winter, so that I have on more than one occasion all but lost it. In soils which are suitable it may be planted by the end of April, provided, as stated for other plants, it be fit to plant out at the time. When in good condition this plant looks well, and it is certainly not so much grown as it ought to be.

To the plants above adverted to others may be added. Cupheas are tolerably hardy, but I do not know that any advantage arises from planting them soon, and I hardly know what to say about Petunias, for I have ceased to grow them to any extent excepting from seed, the established kinds from cuttings being so liable to die off. No advantage would, however, result from planting them early, and, therefore, it would not be prudent to include them in the list. Many other plants useful in the flower garden might be mentioned—as *Pyrethrum*, which may be planted at any time; *Lavender Cotton* the same; while *Viola cornuta* is best planted in the autumn, a better spring bloom following, and the same may be said of *Mimulus*, *Pentstemons*, and sundry other plants. Perhaps in no instance are the advantages of autumn planting more apparent than in that of *Viola cornuta*, which seems to be proof alike to cold, the attacks of slugs, and the other mishaps that winter plants have to encounter, as it is seldom a plant is lost, and it commences to flower much earlier by being established so long before the flowering time.—J. ROBINSON.

(To be continued.)

RAISING VINES FROM SEED.

HAVE any of your readers ever attempted to cross Vines? If they have they will agree with me that a more tiresome, tedious operation is not often performed. To tie a midge fit to tempt a Derbyshire trout requires patience and manual dexterity, but it can be tied in a cool room and when you are in the humour; but to cross Vines successfully you must wait in a lighthouse till they choose to open their flowers, and remove each anther separately with a fine-pointed pair of scissors without the least shaking, you must select pollen from another flower and apply it to the minute stigma, and if, tired of looking at such minute objects, or oppressed by the heat, you take a walk for half an hour, you will, perhaps, find a score of flowers have opened in your absence. If these are examined with a good glass they will generally be found covered with pollen, and as I wish to be as sure as possible that the seed sown is really the result of a cross, I should cut them all out and wait for more. "As sure as possible." Well, I believe we never can be quite sure. When every care has been taken, and I believe my hands are as steady and my eyes as good as those of most persons, still a strong glass generally shows a few grains of pollen scattered on the style, if not on the stigma. If to prevent this you remove the cap from the bloom before it opens of itself, you only increase the evil, for then the pollen is sure to be distributed. Having done one's best to prevent the stigma being fertilised by its own pollen, we must trust, if any has fallen upon it, that that which is applied from a foreign source will be more efficacious.

Some persons will say, But why raise seedling Vines? Have we not already plenty of good kinds? Are not a great many of the new ones worse than the good old varieties? No doubt, and some are very valuable additions. I certainly am not amongst the number of those who despair of great improvement in Grapes. Why should we not try to add to the good

qualities they already possess that of scent? It has always struck me that if Pines had no scent they would not rank so high in public estimation as they do now. If Grapes, in addition to their beauty and flavour, possessed a fine bouquet, would it not be an improvement? This is what I have been trying at for some years, and I will tell how the idea came into my mind. Meeting with the rest of the Fruit Committee at Chiswick some years ago, we entered a house of young Vines in pots. The moment we entered there was a strong smell of ripe Strawberries, and I exclaimed, Why here is the old Hautbois Strawberry which I have not seen for years! Dr. Hogg laughed and said, "It has the exact smell of that Strawberry, but it is a Grape." Never having heard of the Strawberry Grape, or of any kind of Vine with scented fruit, I was very anxious to taste it, but like almost all the members of the Committee, spat it out immediately—the strong perfumed flavour was to me most disgusting. To my surprise one gentleman said, "I do not agree with you, I like it."

Whilst tasting the other varieties the following train of thought passed through my mind:—What a pity a Grape with such a fine scent should be so nasty. After all some one likes it. Is it not because the flavour is in excess? Who can eat a Williams's Bon Chrétien Pear which has ripened on the tree? Yet the same Pear gathered before the flavour is too much developed is first-rate. Fusel oil is, perhaps, the most disgusting thing in nature, but an infinitesimal drop in a large quantity of barley sugar gives the flavour of the Jargonelle Pear. Who does not like the smell of a good ripe Apple? but few would choose to live with a bushel of Ribston Pippins in their drawing-rooms. Why should I not try to modify this flavour by crossing with our best Grapes? Besides, it is said the American Grapes are proof against the attacks of mildew; perhaps the cross may possess the vigour of constitution.

Influenced by these reasons I procured some cuttings, grew them, flowered them, and crossed the flowers with our best Grapes. Seedlings from these crosses are now fruiting. I do not know if they will be of any value, but they are most interesting. I think never before were such leaves seen on a Grape Vine. One, a cross with Muscat Hamburg, has leaves more deeply cut than that variety, and almost twice the size. Some have deep red stalks and leaves of the darkest possible green, and of large size, whilst others might have descended from the Parsley Vine. One has not only set its fruit, but the fruit is already stoned, whilst a Black Hamburg next to it and nearer the boiler is only just coming into flower. The few showing fruit appear rather small in the bunch, so I have crossed them again with the largest Grapes known, such as Canon Hall Muscat, Alicante, &c. What do you think of my chance of raising a good Grape?

Of one fact I am certain, few persons know the amount of trouble, expense, and anxiety represented by one good thing in the way of fruit; the prizes are much talked about, the countless failures are known only to the disappointed ones. I have now scores of Peach and Nectarine trees showing fruit for the first time; numbers of seedling Vines, a few of which will fruit this season; lots of seedling Rhododendrons, and about six thousand seedling Pelargoniums, so you see I am trying to leave my mark.—J. R. PEARSON, *Chilwell*.

MOVEMENTS OF THE COLOCASIA ESCULENTA.—In a paper, addressed to the Academy of Sciences, M. H. Lecoq mentions as an instance of movement in plants the *Colocasia esculenta*. In visiting his hothouse in January last, he perceived a motion in one of the leaves of this plant; he at first attributed it to a draught, but upon examination remarked the same motion in the four other leaves, there being no more at the time. It was a sort of rhythmical tremor, so long as to affect the plants that stood near. His attention being thus aroused, he continued his observations daily, and found the motions of the *Colocasia* were not regularly periodical. Sometimes its tremor would last the whole day and following night; it usually occurred from nine in the morning until noon, and not infrequently the plant would remain in a state of perfect rest for days, and even whole weeks. This induced M. Lecoq to attach a few light bells to the plant, in order to be warned of the approach of the paroxysm. On one occasion it began at two o'clock after midnight, and continued nearly the whole morning. The bells tinkled, and the leaves of the *Colocasia* struck the neighbouring plants with sufficient distinctness to enable the author to count

the pulsations by a stop watch; he found them to be between 100 and 120 per minute. On several other occasions the fits were exceedingly violent. On the 2nd of March last, although the temperature of the hothouse had fallen to 7° Cent., the plant seemed to be labouring under a fit of ague, so that the very pot containing the plant, and weighing about 22 lbs., shook so that the hand of a man could not steady it. The rhythmical tremor was likewise communicated to a fine leaf of a *Strelitzia Nicolai*, another of a *Philodendron pertusum*, and to some fine clusters of flowers of the *Begonia manicata*. M. Lecoq cannot explain the cause of this tremor, but he thinks himself warranted in not attributing it by any means to the temperature; he suggests the possibility of its being the result of a stoppage in the regular perspiration of the plant.

ROYAL HORTICULTURAL SOCIETY.

MAY 5TH.

FRUIT COMMITTEE.—Messrs. J. C. Wheeler & Sons, Gloucester, exhibited some very finely-kept examples of Ashmead's Kernel Apple; they were exceedingly fresh, rich, and juicy, and were unanimously awarded a special certificate. Mr. Gardiner, gardener to Sir George Phillips, Bart., Weston House, Shipstone-on-Stour, sent a dish of Royal George Peaches; they were quite ripe, of fair size, but not particularly rich in flavour.

Mr. E. Baxter, gardener to Charles Keiser, Esq., Broxbourne, Herts, exhibited a Cucumber named Broxbourne Rival, which the Committee considered to be inferior, although very similar, to Telegraph. Mr. H. Drover, gardener to H. Clark, Esq., Fareham, Hants, exhibited a brace of Cucumbers named Drover's Telegraph, but the variety was of no particular merit. Mr. Woodward, The Gardens, Garbrand Hall, Ewell, Surrey, exhibited some examples of Cattell's Eclipse Broccoli, which were very inferior.

James Bateman, Esq., Biddulph Grange, Congleton, exhibited some preserved fruits of the Chinese Loquat (*Eriobotrya japonica*). The preserve was sweet and pleasant, but with no particular flavour. Mr. J. Carr, gardener to P. L. Hinds, Esq., The Lodge, Byfleet, Surrey, exhibited some ripe fruit of *Eugenia jambos*, the Rose Apple, from a seedling tree about four years old grown at Byfleet, where so many of our fine tropical fruits have been brought to such perfection. The fruit is handsome in appearance, about the size of a Washington Plum, of a pale straw yellow colour; the flesh rather dry, about a quarter of an inch in thickness, hollow, enclosing two large seeds; flavour peculiarly pleasant, partaking of that of the Muscat Grape and the Damask Rose, with a scent resembling that of the Myrtle. The plant has borne about ten dozen of fruit, and as this is the first time of its having been fruited and exhibited in this country, it was unanimously awarded a special certificate.

FLORAL COMMITTEE.—One of the best exhibitions ever seen at a Tuesday meeting was brought together on this occasion; there was a rich supply of valuable plants from the metropolitan exhibitors, and the awards made for novelties were very numerous.

Mr. Moore, gardener to the Earl of Shrewsbury, received a special certificate for a small collection of cut Orchids. Messrs. Veitch exhibited young plants of the Society's hybrid *Coleus*, which have not been in their possession more than a fortnight—viz., *C. Bausei*, *C. Saundersii*, *C. Berkeleyi*, *C. Batemanii*, and *C. Ruckeri*, each of which was justly honoured with a first-class certificate. *Aphelandra chrysopa*, with bright yellow flowers, from the same firm, had a first-class certificate, also *Scutellaria mocciniiana*, a handsome greenhouse plant with bright scarlet flowers. *Begonia Huttoni* had a second-class certificate; it has pale buff flowers with finely-cut foliage. *Primula cortusoides striata*, a seedling from *Primula cortusoides*, having a white stripe in the centre, received a first-class certificate; *Cymbidium Huttoni*, a dusky, dingy-spotted Orchid, had beautifully marked, a second-class certificate; *Oncidium cucullatum*, a small spotted kind, a first-class certificate; *Burlingtonia fragrans major*, resembling *candida*, a first-class certificate; *Epidendrum pauciflorum*, with an elegant spike of rosy purple narrow-petalled flowers of promising character, a first-class certificate; and *Laelia grandis*, a curious buff-winged variety, a second-class certificate. A special certificate was awarded Messrs. Veitch for the collection of Orchids, one for a collection of *Amaryllids*, and another special certificate for miscellaneous plants.

Mr. Turner, Slough, sent a fine collection of Tulips, and received a special certificate; also a small collection of beautiful *Auriculas*, selfs and show flowers, for which he likewise was awarded a special certificate. He also received first-class certificates for three seedling *Auriculas*—viz., Mrs. Mendall, a fine grey-edged flower; Novelty, a purplish violet self; and Wonderful, self, a large deep reddish-maroon. Mr. Turner's *Auriculas* have been the admiration of all who delight in these spring flowers; it is to be regretted that the season at which they are in perfection is so uncertain. Last year they were only at their prime in May; this year they were in perfection in April. How absurd it is to find fault as to the time fixed for exhibition, for so one can foresee what the season may prove. It is a flower to be exhibited only when the season permits, early or later in the spring.

Mr. Noble, Sunningdale, sent a large collection of seedling *Clematises*, four of which were selected as superior varieties, but none of them being named, the Committee could not deal with them. If exhibitors would but consider how much the Committee have to do, and in what a short time it is expected to be done, they would not think of requesting names to be assigned by them. Every florist's flower or hybrid garden flower must be named to be recognised. There were decidedly first-class flowers in this collection. Mr. Williams, Paradise Nursery, sent a specimen of a curious *Nidularium*, called *atrosanguineum*, which was awarded a first-class certificate; *Cocos Weddelliana*, an elegant plant, and graceful for table decoration in its young state—first-class certificate; and *Maxillaria lutea alba*—second-class. A special certificate was awarded for Mr. Williams's fine collection of plants. Messrs. Smith, Dulwich, received special certificates for a collection of plants, consisting of fine specimens of *Erica vittata* and seedling *Azaleas*. *Azalea* Sir Robert Napier was awarded a first-class certificate. The colour is a deep fiery red, distinct from that of any known variety, but the flower was rather too rough in the outline, and small. The plant, however, was out of condition. This seedling will prove a general favourite for its distinct colour. Messrs. Smith also exhibited a pale rose, smooth-petalled, seedling *Azalea*, called Oracle, but too small for exhibition purposes.

Mr. Baxter, gardener to C. Keiser, Esq., Broxbourne, sent two exquisitely grown specimens of *Dendrobium pulchellum*, which was awarded a special certificate. Mr. Wimsatt, Ashburnham Park Nursery, received a first-class certificate for another of the Society's hybrid *Coleuses*—*C. Marshallii*, also a second-class certificate for *Coleus Telfordii* anrens, having pale yellow foliage, with small dark crimson markings in the centre.

Messrs. E. G. Henderson, Wellington Nurseries, exhibited a small but good collection of Orchids, which was awarded a special certificate. Mr. Woodward, Ewell, sent a very beautiful specimen of *Trichopilia suavis*, which received a second-class certificate; and Messrs. Lee, Hammersmith, had a special certificate for a collection of plants, containing many well-grown and ornamental specimens. Mr. Pilcher, gardener to S. Rucker, Esq., had a second-class certificate for *Epidendrum inversum*, an old and neglected Orchid with a peculiarly fine scent. Mr. Hooper, Bath, gained the Silver Floramedal for twenty-four Pansies, a special certificate for Pansies in pots, and showed several promising seedlings, but not in good condition. Mr. Hooper also sent a seedling Pink adapted for forcing, and a variegated Pansy, which will be useless as a variegated plant. The seedling Pansies noticed were Mr. Turner, Mr. Bull, and Cheerfulness, a white bedding variety. Mr. J. Jackson, Kidderminster, sent cut specimens of a double *Polyanthus*; the same variety has been sent from three other firms, and it would therefore seem to be widely distributed. Mr. Brown, Slough, and Mr. Shenton, Biggleswade, exhibited cut Pansies.

A collection of Mr. Bause's seedling *Caladiums* was sent from Chiswick, and they were beautiful from the delicacy of the tints which they exhibited, the ground colour being pale yellow. By some great inadvertency these plants escaped notice. They are of great merit, and will take a position in due time.

Mr. J. Hodge, gardener to E. Wright, Esq., Gravelly Hill, Birmingham, sent cut specimens of Orchids, but not of the best varieties; Mr. Wimsatt, Ashburnham Park Nursery, fine specimens of Bronze Zonal *Pelargoniums*, *Rosalina*, *Her Majesty*, *Admiration*, *Empress Eugenie*; and Messrs. E. G. Henderson, seedling Variegated Zonal *Pelargoniums*, *Maid of Judah*, *Star of Peace*, Mrs. Gladstone, Mary Hadwin, Mrs. Grieve, and E. G. Henderson, a Bronze Zonal. Mr. Tanton, Epsom, contributed a variety of *Leschenaultia biloba*, *Polygala Dalmaisiana*, *Aphelaxis macrantha splendida*, and *Boronia serrulata compacta*. C. Leach, Esq., sent cut specimens of *Elisena longiflora*, rarely seen in flower, and *Laelia praestans*. From Mr. Rae, Eglinton Castle, came four *Cinerarias*; from Messrs. Rollisson, *Vanda tricolor meleagris*, and *Gymnogramma Rollissonii*; and from Mr. Nelson, Bristol, a seedling *Lomaria*, supposed to be a hybrid between *L. gibba* and *Blechnum corcovadeense*, the same variety as that exhibited by Mr. Dean at the last meeting.

SCIENTIFIC COMMITTEE.—The second meeting of this Committee of the Royal Horticultural Society, was held in the Council Room at half-past one, W. Wilson Saunders, Esq., F.R.S., in the chair. The following members were present:—Dr. Thomson, The Rev. J. Dix, Mr. Marshall, Mr. Reeves, Dr. J. H. Gilbert, Dr. Masters, Mr. Moore, Mr. Bateman, Mr. Blenkins, Mr. Mumby, Dr. Welwitsch, Dr. Voelcker, Mr. A. Murray, Mr. J. Miers, Mr. Wilson, and the Secretary, the Rev. M. J. Berkeley.

Mr. Masters made a communication to the Committee on the hair-like cells he had discovered at the base of the flower of *Aucuba japonica*, which would entrap the pollen cells, and he considered them as performing an important office in the fertilisation of the plant. The epidermal tissue terminating in these hair-like processes he had found to exist in both sexes.

The Rev. M. J. Berkeley exhibited a portion of the stem of a Scotch Fir infested by an insect, to which the death of the tree was attributed. The Committee was in doubt whether this was a sufficient cause for the decay of the tree, and it was referred back to the gardener who had sent it for further information.

Two communications were read by the Secretary, on the subject of the black spots on Orchids. One was from Mr. Earley, who considered there

to be caused by an excess of moisture combined with an insufficiency of light and air. The other paper on the same subject was from Mr. James Hosack.

Mr. Berkeley showed some specimens of Orchid leaves from Mr. Anderson, on which he considered three distinct forms of spots could be detected, the chlorotic spots, the black spots, and the putrid spots. Mr. Marshall brought under the notice of the Committee a number of leaves taken from various species of Orchids, and in which nearly every form of this disease was visible: he considered this result to be dependant on the plants getting a sudden check when they were in full growth, as several specimens which were sent to the International Horticultural Exhibition in perfect health became affected, and never recovered from the effects. Mr. Hilenkins stated that he had examined the leaves from three species of Orchids—viz., *Vanda gigantea*, *Dendrobium maculatum*, and a species of *Oncidium* which he laid before the Committee, and which had been sent to him for microscopical investigation. In two of the specimens he did not consider the appearance was fairly to be attributed to this disease, but it seemed to him to be more like the erosion of a species of thrips or other insect. He found the cells of the leaf-tissue blackened as from decay, but in the *Vanda*, which was acknowledged by the Committee to be affected by the disease, he detected even there an enlarged and discoloured nucleus of the cell, and the reniform cells forming the margins of the stomates seemed to be particularly affected. He suggested it would be advisable to appoint a sub-committee who should visit the houses of the principal Orchid-growers for the purpose of acquainting themselves with the different forms of that disease and the conditions under which they occurred, and report the result of their inquiries to the general Committee. Mr. Wilson Saunders approved of the appointment of a sub-committee. Mr. Berkeley informed the meeting that it was the putrescent form of that disease that affected Mr. Rucker's plants. Mr. Bateman had some plants in which the disease resembled the action of thrips. He thought one fact was determined—that there were various causes for this disease. Mr. Marshall stated distinctly that he had removed thrips from the leaves of Orchids so affected. Mr. W. Saunders was of opinion that a sub-committee would be of great advantage to visit different houses, and thoroughly examine into the question. Mr. Bateman thought the sub-committee might make it a part of their labours to ascertain whether the disease was contagious or not.

Ultimately a sub-committee was appointed, and the following gentlemen were nominated members:—Dr. T. Thomson, Mr. Marshall, Dr. Masters, Mr. A. Murray, Mr. Bleukins, and the Secretary.

At the next Meeting "The Nomenclature of Plants" will be brought under the consideration of the Committee.

GENERAL MEETING.—W. Wilson Saunders, Esq., F.R.S., in the chair. After a list of donations had been read, fourteen new Fellows elected, and the Daventry Floral Society admitted into union, the awards of the Committees were reported, and in doing so the Rev. J. Dix directed attention to a cheap wooden tally which, having a square end section, admits of four names being written on the four sides. The opposite extremity, that intended for insertion in the soil, is formed into a wedge by one diagonal cut, dividing each tally from the other made out of the same bar of wood, and is coated with anti-corrosion paint.

The Rev. M. J. Berkeley then observed that at the last meeting he had called attention to a form of *Gesneria* which exactly corresponds with *Gesneria macrantha purpurea*, figured in the "Gardeners' Magazine of Botany;" and Mr. Tanton, who sent it, had since informed him that the bulb had been collected in New Grenada, and had brought to the Meeting a cutting in flower; but though the plant exhibited on the former occasion exactly accorded with the figure in the work referred to, the cutting differed in the flower being of a lighter crimson, and in the colour and pubescence of the calyx—differences, however, which might be ascribed to its having been subjected to forcing. The only difference between it and the true *macrantha* from Messrs. Veitch was a spot on the lip of the one, which was absent in the other.

Mr. Berkeley then directed attention to two Tulip flowers, produced by plants raised in his own garden from seed, which had been sent him fifteen years ago, or more, by Dr. Selwitsch, from Portugal. Until last year all the flowers were rather dull in colour, with a dark blotch at the base of each petal, then one of them "broke," but he lost the bulb; this year, however, a great proportion of the flowers had done so, the dark blotch had vanished, and had given place to a scarlet feather, a number of the scarlet cells had changed into yellow, and this colour shining through the scarlet rendered the latter more vivid. As a fact bearing on the cause of "breaking," as it is termed by florists, he would mention that the bulbs last year, instead of being planted in November as usual, had been kept out of the ground till January.

Mr. Berkeley passing to the subject of edible Fungi, remarked that a dish of *Agaricus gambosus*, or St. George's Mushroom, had been shown, although the specimens were very far from being of so large a size as that species was known to attain. This was one of the best of the edible *Agarics*, differed from the common Mushroom in having white gills, and was commonly to be found in grass fields about the 20th of April, coming up after rain. This year it did not appear till after the heavy rains of last week. It was nearly allied to the *Monoceron*, much esteemed by the French, and which they preserve for

winter use. After referring to a passage in a letter from Dr. Livingstone to Sir Roderick Murchison as to the value of Fungi as food, Mr. Berkeley said he had just received a letter from Professor Fries, one of the greatest authorities on the subject, who had sent him a prospectus of a new work on Hymenomyces, a class of Fungi which afford excellent nourishment. In Sweden and Norway they were used along with flour in bread, and must certainly be better than the inner bark of trees, which was used there for the same purpose. In connection with this, Mr. Berkeley observed that at the time the Potato disease broke out Silesian Beet had been recommended for mixing with flour for bread, and it answered the purpose very well, only the bread made with it contained little lines of treacle, which were produced in the process of panification. As an article of food he hoped the Mushroom tribe would not be so much neglected as it had been. After stating that four dishes of Mushrooms—two from natural and two from artificial spawn—sent by Mr. W. Ingram, of Belvoir Castle Gardens, exhibited hardly any difference, Mr. Berkeley added that he had received a letter from Mr. Harry Chester, of which the purport was a hope that the Royal Horticultural Society would take up the subject of Fungi as food, and get analyses of them; and Mr. Berkeley said that in addition to the prize which had been already offered by a friend for edible Funguses in September, a second prize would be given by another party; and it might therefore be hoped that there would then be an excellent display, not only of esculent but of poisonous Fungi.

A Fungus belonging really to the genus *Uredo*, to which a great many Fungi had been improperly referred by botanists, was then noticed, and a drawing of it exhibited, in which it was seen to form little bushes consisting of vertical cells with mycelium below.

Mr. Berkeley next referred to *Scilla campanulata*, of which a specimen double the size he had ever seen before was sent by Mr. Cox, of Redleaf, who informed him that the causes of its presenting such an unusual degree of development appeared to be its being grown in very rich loam, and the roots never having been disturbed. An *Anopterus* exhibited was then said to remind one very much of a *Clethra*, and to be nearly allied to *Escallonia glandulosa*; and in conclusion Mr. Berkeley pointed out a case in which *Auricula* stamens had become developed into leaves and the ovules were entirely naked. Attempts had been made to raise plants from the latter, but had entirely failed.

Mr. Bateman said, that before offering his promised remarks on the Loquat, he would call attention to some very beautiful Clematises raised by Mr. Noble of Sunningdale, but which were unnamed; also, to two remarkable species of Gum trees (*Eucalyptus*), from the beautiful gardens of C. J. Woodfield, Esq., at Camus, on the shores of the Mediterranean, where no trees seemed to have such a rapid growth, this amounting to 8 or 10 feet in a single year, and some of them were 50 or 60 feet high. Not only did they produce flowers but seeds as well, the fruit being like an acorn, but with this exception, that instead of the cup being at the bottom it is at the top of the fruit.

With regard to the Orchids shown, his (Mr. Bateman's) remarks would on this occasion be brief. The first he would refer to was a very pretty species of *Epidendrum* from Mr. Rucker, which, though it had neither been figured nor exhibited before, had been named *E. inversum* by Dr. Lindley many years ago. It possessed pretty rose tints, was agreeably fragrant, and being, moreover, a cool Orchid it would, no doubt, become a favourite. Next, there was the *Trichopilia suavis*, from Mr. Woodward, of Fwell, and which was, perhaps, the most perfect specimen of that plant shown at any meeting. In a nice collection from Messrs. E. G. Henderson, there was *Dendrobium infundibulum*, which now vindicated its character as being distinct from the *D. formosum* shown by Messrs. Veitch. It, too, was a cool Orchid, flowering beautifully with his friend, Mr. Wentworth Baller, under that mode of treatment. Attention was also drawn to a remarkable *Oncidium* from Mr. Salt, of Leeds, sent under the name of *O. concolor*, but of which the clear pale yellow flowers were certainly not those of the species commonly called by that name; to *Saccolabium ampullaceum*, from Messrs. Rollisson; and to cut spikes of an accidental variety of *Cattleya citrina*, exhibiting a rich orange tint instead of the ordinary lemon colour, and which was more beautiful than the common form. Turning next to Messrs. Veitch's collection, there were in it *Laelia grandis*, a fine kind of easy culture and having buff flowers; the Ceylon *Dendrobium MacCarthiae*, which had formed the subject of one of his lectures last year, and of which not a word too much had been said in its praise; but fine as Messrs. Veitch's specimen was on the present occasion, the plant in time would be found still more beautiful. As regards *Epidendrum paniculatum* from the same firm, it was still flowering weakly, but when stronger the spike would be something like a bunch of *Lolae*, only the flowers would be richer in colour. A pretty new white *Dendrobium* was shown by Mr. Williams, and it possessed the additional merit of being sweet-scented; and in a collection which should be nameless, there was a *Cypripedium*, called *biflorum*, which exemplified the folly of naming as distinct species plants in which accidental deviations from the normal state had taken place, for not a single stem was two-flowered. Dr. Lindley made a similar error by giving to an *Oncidium* the name of *uniflorum*, whereas the plant now never condescends to produce less than three blossoms on a spike. The last Orchid to which he would direct attention was *Dendrobium thyriflorum*, of which Mr. Marshall had brought a beautiful cut spike.

Mr. Bateman said he would now turn to the Loquat, the *Mespilus* or, more properly, *Eriobotrya japonica*, the *Néflier du Japon* of the French, and of which there was in the room a large specimen brought from the Society's conservatory. There was this difference between the Floral and Fruit Committees, that while the former had to deal with entirely new forms, the labours of the latter were much more monotonous, being chiefly confined to new varieties of old forms, although the present meeting was an exception. If we supposed a horticulturalist who died one hundred years ago to revisit us and accept an invitation to a breakfast at some pleasant suburban villa, almost everything would be new to him among the flowers in the conservatories and parterres, and among the shrubs and trees in the grounds. He would, therefore, probably expect equally delightful surprises among the fruits of which he would presently have to partake at his host's hospitable board, but in this he would be disappointed. There would be Peaches and Pine Apples, very fine of their kind; Grapes, and Figs, and Strawberries, and so forth, but of all these he would have partaken before. New fruits there would be absolutely none, unless his host happened to grow the Purple Granadilla or the Banana in his stoves; but these were quite exceptional cases. To be sure if he had visited Sion ten years ago, he might have tasted the Mangosteen, and if here to-day he might have indulged in *Eugenia jambos*, or the Rose Apple, but these opportunities, like angel's visits, were few and far between. Our own Queen, in whose reign it fruited, only tasted the Mangosteen once, whereas King Charles, to whom the first Pine Apples were presented, feasted upon them again and again. All this was very strange and disheartening. There were plenty of excellent tropical fruits, but nobody except Mr. Hullett has ever tasted them in this country. From time to time a tropical fruit was produced in the garden of some wealthy amateur, and after the fact had been duly proclaimed, it was half a century before we heard of it again. Thus we have had the Longean and Liteli, the Mango, the Blimbing, &c., and then the Loquat, to which he would at present confine his remarks.

The Loquat, a native of Japan, and first mentioned by Thunberg, in his work, "*Flora Japonica*," published in 1784, is, according to Mr. Fortune, to whom he (Mr. Bateman), was greatly indebted for some valuable memoranda, "a common fruit tree both in China and Japan, and its fruit is highly esteemed by the natives of both countries. There is a single-seeded variety which is most valued. The cultivation of this tree extends from south to north over 7° or 8° of latitude in China—that is, from Canton in the south, to Nanking in the north. The climate between these lines of latitude differs very considerably, particularly in winter, the northern part being much colder than the southern, but in all parts the summers are very warm; indeed, the thermometer in the shade frequently rises above 100° Fahr. in the north at Shanghai, while I never knew it higher than 92° in Macao or Canton." The tree, continued Mr. Bateman, also succeeds in the Botanic Garden of Saharunpore, and has extended along the islands along the coast of the Mediterranean. He had met with it in every garden at Cannes, scenting the air in November and December last, with its agreeable aromatic flower; and there, an exceptional frost notwithstanding, it had set abundance of fruit, which were not ripe before he was obliged to leave. Such is the estimation in which it is held, that quantities are preserved at Grasse (some of which Mr. Bateman exhibited). He could call on the noble President as a witness to its merits, he having partaken of an omelette *à la Néflier du Japon* (Japanese Medlars), and pronounced it excellent.

Mr. Fortune, from the fact of the different climates in which the Loquat flourishes, was of opinion that it might be easily cultivated in an artificial way in countries like our own, where the climate is not suitable to its requirements. "What, then," said Mr. Fortune, "are those requirements? I believe them to be rest in winter, and particularly a hot summer and autumn. This rest in winter may be given by cold, or by dryness, or by both combined. In proof of this I may mention that the tree succeeds admirably in the north-west provinces of India. I met with it in the Government garden at Saharunpore in as fine condition as it is seen in China or Japan. Further, I believe it succeeds perfectly in the south of Europe, in the north of Africa, and in the islands of the Mediterranean. In all those countries it has the two essentials—namely, a cool or dry winter, and a warm summer and autumn.

"In the latitude of London the Loquat is all but perfectly hardy. A tree growing against a south wall, and without any protection whatever, used to be in the garden of the Society at Chiswick twenty or thirty years ago, and may still be there. It rarely produced any blossoms, and never fruited. It wanted something more than our northern climate could supply. What that something is I have already indicated in describing the climate of its native country and of those other countries in which it is found to be at home. Give it the temperature and the rest it receives in any of those countries, and this tree will not only flower freely, but also produce an abundance of fruit in due season."

In a book which had been kindly lent him by the Linnean Society, the "*Jardin de Malmaison*," edited by M. Ventenat, and published at Paris on the 30th Germinal of the year xi. of the French Republic, corresponding to our 30th of April, 1803, there was a figure of the plant in flower; but it had been figured before that by Thunberg, and indeed the plant itself was introduced into England by Sir Joseph Banks in 1787. This work, however, came to us under circumstances of peculiar interest, for there was an interesting letter from M. Ven-

tenat written by desire of Madame Buonaparte, afterwards the Empress Josephine, to Sir James Smith, President of the Linnean Society, begging his acceptance of a copy of the work, and regretting that as almost all the plants at Malmaison had come from England, there was nothing that would be new to him. A hope was, however, expressed, that as orders had been sent out to all countries of the globe to collect plants and seeds, he should be able to do better by-and-by. (This hope was frustrated by the battles of Nile and Trafalgar, which placed the empire of the seas entirely in the power of England.) Allusion was also made to a very choice herbarium formed by Madame Buonaparte, and in which she took a lively interest, and to which it was hinted any addition would be most welcome. Sir James, with true English gallantry, in reply offered to the illustrious lady his sincere acknowledgments, and promised to send anything that could be spared, either dried plants or seeds, that would be likely to interest her.

To proceed with the subject of the Loquat. It did not appear to have fruited at Malmaison. This, however, was reserved for the county with which he (Mr. Bateman), was connected—Staffordshire, for on February 2nd, 1819, a letter from Lord Bagot was read before the Horticultural Society, in which an interesting account was given of the flowering and fruiting of the plant at Blithfield, and high testimony to its merit. Sir William Coke, who was on a visit to Lord Bagot, had been in the habit of eating large quantities of it in Ceylon, but never tasted any so good as Lord Bagot's. The tree which fruited was wintered out of doors and then taken in in October, and plunged in the tan bed of a stove.

Mr. Bateman believed that he was the next to fruit it about the year 1827; but it was turned out at once in a corner of a tan bed bricked off. It flowered freely, but fruit did not set well; only a dozen were produced, but these were delicious, juicy as a Grape, with the colour of the Apricot, and in flavour a combination of both. Afterwards, the larger the tree grew the fewer were the fruit; there were only five in the second year, and none in the next, and becoming tired of this the tree was grubbed up. Perhaps if the flowers had been artificially fertilised more fruit might have set, but there were no bees or insects to do it in our winters as at Cannes. Mr. Loudon also mentioned one or two instances of fruit having been produced, but between that time and this, a period of forty years, Mr. Bateman said he had only heard of it some three or four times. The fruit was occasionally to be seen in Covent Garden Market, but it was very bad. At Malta the sailors touching there made themselves ill by gorging themselves with the fruit, which they call Kill-johas; but these were not fair examples, and we might assume that when properly ripened it is an excellent fruit. The only question is how to obtain it.

The plant, Mr. Bateman added, is nearly hardy. There was a fine plant of it against a wall in the garden at Chiswick, but it was killed by the severe winter of 1837-38, and it never flowered. No doubt at one period the tree requires great heat, and that a rest either by starving or roasting is also required. Mr. Fortune recommends "a cool and dry winter, and a warm summer and autumn;" but here we are met by the difficulty that not only as hitherto artificially cultivated, but as acclimatised in Provence, the tree always flowers in the winter and ripens fruit in the spring. Either, therefore, this constitutional peculiarity must be changed and overcome, or means must be found to make it set its fruit more freely. Its winter flowering, though a difficulty, is also an advantage, as such flowers and fruit are desirable. Mr. Bateman concluded by inviting suggestions on the subject.

Mr. Saunders believed the Loquat to be a very wholesome fruit, indeed, as much so as the Peaches, which would have evil results if partaken of, as the sailors did, in excess. With regard to the Encalyptus, if the leaves were broken they would be found very aromatic, for they contain a powerful essential oil. The trees were fast-growing, and the wood of nearly all the species was very strong, durable, and heavy, sinking in water. Some of them grew upwards of 200 feet in height. Mr. Berkeley had drawn attention to a remarkable specimen of *Seilla campanulata*, and he would just add that all spring flowers had developed themselves this season in an unusual manner.

CULTURE OF ALLOPLECTUS CAPITATUS.

THIS may well be recommended to any one desiring to grow a very beautiful stove plant. Under good treatment it rises from 3 to 4 feet high, attains from 2 to 3 feet in diameter, and is remarkable for the singular beauty of its flowers as well as for its handsome foliage. The flowers are small and tubular, of a pale yellow colour, each inserted in a large brilliant crimson calyx, and the whole borne in large heads. The leaves are of great size, of a fine deep green; the midribs and stalks, like the calyx, are of a bright crimson. It is a native of Colombia, and was introduced by M. Linden, of Brussels.

Its culture is similar to that of the Gesneras. It requires a light but rather rich soil. I have found it flourish well in chopped turfy loam, fibrous peat, decayed vegetable mould, and a little silver sand. Free drainage is essential; and when the plants are potted in early spring they should have a gentle watering, and be placed in a moist heat. They grow rapidly, and may be encouraged with plenty of heat and a free use of the syringe.

Early in June, as soon as the pots are filled with roots, the plants should be shifted again, and the same treatment continued as before for another month. Then they should be removed into a lower temperature with more air, shaded from the sun, and placed near the glass. Here they will speedily show flowers.

When the blooming is over cut down the stems about half way, and give only sufficient moisture to keep the plants from becoming quite dry until after new shoots are made. The following season, after being repotted, they will produce an abundant supply of their attractive heads of bloom.

For increasing stock, cuttings may be made of the leaves at the upper part of the stem. Cut them off with the bud at the base entire, and insert them in pots of light soil with about an inch of silver sand at the top; cover with bell-glasses, and plunge the pots in a brisk bottom heat. The sand should be kept just moist, and no more. As soon as they begin to grow give air, and when they are well rooted pot off in the same compost as recommended for the older plants. They should be shaded for a while until they have become established. Each leaf will strike well enough, but the young shoots make better plants.—CHARLES ROBERTS, *Dorfold Hall*.

HYBRIDISING AT THE CHISWICK GARDEN.

It is certainly very gratifying to know that the Council of the Royal Horticultural Society intends appropriating the whole of the amount realised by the sale of these magnificent varieties of *Coleus* to the further development of experiments in the Chiswick Gardens. I think this is a step in the right direction, and one likely to produce good results.

The Council having wisely decided on this course, the next thing to be considered is how best to encourage and improve that important and most interesting branch of science—hybridisation. I trust I may not be thought presumptuous if I offer a few suggestions which occur to me, and which I think likely to bring about this desirable end.

1st, A suitable house should at once be erected.

2nd, More assistance should be given to Mr. Bause, so as to enable him to devote more time to this most interesting study, which he has so successfully pursued up to the present time under difficulties.

The handsome sum obtained by the sale of the *Coleus* hybrids must impress every one with the idea, that besides enriching our gardens with many valuable plants, the Society will at the same time be diffusing much useful knowledge, and also realising large sums of money, which may be used for the advancement of floriculture and horticulture in general.

For the sum realised by the sale of the *Coleus* a span-roofed house 100 feet by 19, in every way suitable for the purpose of hybridisation on an extensive scale, could be erected. The house should be divided into five 20-feet compartments, one of which should be used for the hybridisation of tropical plants, the next for plants requiring an intermediate temperature, the third for all kinds of softwooded plants, the fourth for greenhouse and New Holland plants, and the fifth for hardy plants.

Each compartment should be heated separately, so that the supply of artificial heat might be regulated to a great nicety. This would be best done by taking a flow and a return pipe outside of the house from one end to the other. The pipes for heating each division should have a stop-valve on the flow, and also on the return, and these valves should be so placed in each compartment that they could be easily reached from the inside.

The internal arrangement of the structure should consist of a walk 3 feet wide through the centre of the house, with a bench 3 feet 6 inches wide on each side, made of strips of deal three-quarters of an inch thick, and 3 inches wide. A space of half an inch should be left between these strips, so that the air, which must be admitted as near the ground level as possible on each side of the house, may circulate freely amongst the plants after their blossoms have been fertilised. The ventilators must, however, be covered with fine perforated zinc, so that all insects may be excluded. The ventilators must also be made to fit closely, so that the air may be excluded at the time the plants are undergoing the process of fertilisation. Provision, too, must be made for the escape of impure air at the apex of the roof. These ventilators must also be covered with finely perforated zinc to exclude insects, and all the laps of the glass should be puttied-up, so as to prevent the wind from blowing through them, and also to prevent the admission of insects.

If the house were placed so that the ends should face the east

and west, the pipes for heating it ought to be arranged on the south side. Over these a small pit from 4 to 7 feet wide might be erected at a small additional cost, and in this large numbers of the seedling plants might be grown. It would also be found invaluable for many other purposes in an establishment like Chiswick, where so many plants are required for presentation to Fellows of the Society, the beautifying of the gardens at South Kensington, &c.

Up to the present time too much money has been spent on the gardens at South Kensington, and too little on Chiswick; but I hope better times are in store for Chiswick, and that more money will in future be granted for the proper keeping of this fine old garden, which is now, under Mr. Barron's skilful management, beginning to assume a position more worthy the Royal Horticultural Society.—J. WILES, F.R.H.S., *Ashburnham Park Nursery, King's Road, Chelsea*.

MY ORCHARD-HOUSE JOURNAL.

April 25th.—Finished the thinning of Apricots. So thickly had they set, that a bushel of the young fruit has been gathered from trees in pots. Plums have set in equal abundance, so that severe thinning will have to be practised.

May 3rd.—Our first hot day, thermometer at 2 P.M. in the open air in the shade, 77°; in the orchard house, also in shade, with ventilators and doors open, 95°.

May 4th.—Thermometer in the open air at 2 P.M., 65°; in the orchard house, 80°. In the Cherry house the earliest kinds of *Gnagnes*, the *Lamaurie* and *Guigne Très Précoce*, are commencing to colour—a sort of pleasant foretaste of summer. The fruit of Peaches and Nectarines are the size of beans, and most abundant. The trees have been infested with the brown aphid (*Aphis persicæ*), which have been easily destroyed by the quassia mixture applied with a small painter's brush.—T. R.

NEGLECTED BORDER FLOWERS.

How refreshing it is to see that there are a few people amongst us still interested in our border flowers, and, no doubt, there are many more who could tell us of their pets. I trust the interest in them manifested of late in the pages of "our Journal," will not be suffered to flag until the delights of our early days are restored to more than their original places.

I have just now under my eye a race of the neglected ones, which I have made up my mind to say a word in favour of, I mean the *Epimediums*. We seldom see them unless we chance to peep into some of our old-established nurseries, where such plants are cared for.

I am quite of opinion that the *Epimediums* are worthy of far more extensive cultivation than at present, for they are in reality spring flowers, and there is no difficulty in cultivating them. Some of them also are not to be despised for in-door decoration early in spring, if grown in pots for that purpose. Especially I would instance that gem of the race called *rubrum*, with its bright red flowers, and for a time without leaves.

Epimediums like a moderately moist, shady situation, but not close confinement, for they delight in a pure atmosphere, being inhabitants of elevated situations; they will grow in many situations, and in different soils, but to have them under control and in good condition, treated as follows I think they will give satisfaction.

A bed or border for their reception may be thus prepared. Take out the soil to the depth of 20 inches, in the bottom place a little rough drainage to carry off any superfluous or stagnant water, cover the drainage with litter or other material to prevent choking up, then fill the remaining space with compost to 4 inches above the ground level to allow for the soil sinking. The compost which I use consists of two barrowloads of friable loam, half a barrowload of good, sound, sandy peat, half a barrowload of leaf mould, and a liberal sprinkling of broken grit, with coarse river sand to keep it porous. Let the soil of the bed settle pretty firmly before planting.

Should it be deemed desirable to grow *Epimediums* in pots for plunging, or otherwise, the compost named will answer for them, care being taken to plunge them in the shade, attending to watering them as they may require. Sprinkling overhead is beneficial to them occasionally.

There are several kinds worthy of cultivation. The following are what I consider the best of the race, but tastes vary:—*Epimedium alpinum*, red and yellow; *E. grandiflorum*, white; *E. macranthum*, white; *E. sulphureum*, yellow; *E. pin-*

natum elegans, yellow; and *E. rubrum*, red, which I think is the gayest of the race. There are others equally deserving of cultivation, but these at present are my choice.

LIST OF PLANTS IN FLOWER.

April 2. <i>Ulmus montana pendula</i>	April 18. <i>Spiraea lavigata</i>
<i>Ribes speciosum</i>	" 20. <i>Iris pumila</i>
<i>Viburnum opulus sterilis</i>	<i>Corydalis nobilis</i>
Double-blossomed Furze	<i>Spiraea alpina</i>
<i>Lonicera istarica</i>	<i>Anemone nemorosa plena</i>
Gooseberry	<i>Douglasia epipactis</i>
<i>Mespilus canadensis</i>	<i>Tulips Rex Rubrorum</i> and
<i>Anthriscus Campbellsii</i>	<i>Van Thol</i>
<i>Viola cornuta</i>	<i>Epimedium pinnatum</i>
<i>Fritillaria meleagris</i>	<i>elegans</i>
<i>Cerastium Biebersteini</i>	<i>grandiflorum</i>
<i>Arabis alpina</i>	<i>Gentian montanum</i>
5. <i>Dielytra spectabilis</i>	" 25. <i>Pulmonaria virginica</i>
<i>Berberis dulcis</i>	<i>Saxifraga cordifolia</i>
<i>Corydalis lutea</i>	<i>Adonis moschatellina</i>
<i>Scilla bifolia</i>	<i>Trichomena columnne</i>
<i>Anemone apennina</i>	<i>Veronica multifida</i>
" 7. <i>Tussilago petasites</i>	<i>repens</i>
<i>Berberis Darwinii</i>	<i>syriaca</i>
<i>Arabis hirsuta</i>	<i>Cardamine cordifolia</i>
<i>Alyssum saxatile</i>	" 27. <i>Arabis lucida</i>
<i>Cardamine pratensis plena</i>	<i>Amygdalus nana</i>
" 12. <i>Iberis sempervirens</i>	" 30. <i>Ranunculus amplexicaulis</i>
<i>Leucojum aestivum</i>	<i>Pentstemon verna</i>
<i>Narcissus biflorus</i>	<i>Ficaria verna</i>
<i>Prunus domestica</i>	<i>Polyanthus</i>
" 16. <i>Daphne genkwa</i>	<i>Primula, double white</i>
<i>Lamium maculatum</i>	<i>Cheiranthus Marshalli</i>
<i>Anemones, various</i>	<i>ochroleucus</i>
<i>Saxifraga hypnoides</i>	<i>Orobanch verna</i>
Apples	<i>Helleborus fetidus</i>
Pears	<i>Gentiana acaulis</i>
<i>Narcissus poeticus</i>	<i>Fritillaria imperialis, red</i>
" 18. <i>Saxifraga tridactylites</i>	<i>Convallaria majalis</i>
<i>Viola montana</i>	<i>Ranunculus auricomus</i>
<i>Dubautia polifolia</i>	<i>Auricula</i>
<i>Viola palmata</i>	
<i>hirta</i>	

—H. M., Achlam Hall, Midllesbrough-on-Tees.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

COCHLIOSTEMA JACOBIANUM (General Jacob's *Cochliostema*). *Nat. ord.*, Comelyneae. *Lim.* Monadelphia Triandria.—Native of Ecuador. Flowers pink and blue, slightly fragrant. (*Bot. Mag.*, t. 5705.)

LYCASTE BARRINGTONIÆ, var. *GRANDIFLORA* (Large-flowered Mrs. Barrington's *Lycaste*). *Nat. ord.*, Orchidaceae. *Lim.*, Gynandria Monandria.—Native of West Indies and South America. Flowers white, partially green-tinted. (*Ibid.*, t. 5706.)

BEGONIA FALCIPOLIA (Sickle-leaved *Begonia*). *Nat. ord.*, Begoniaceae. *Lim.*, Monoclea Polyandria.—Native of Peru. Flowers light rose. Leaves red-purple beneath, green spotted with white above whilst young. (*Ibid.*, t. 5707.)

ONCIDIUM CECUTILLUM var. *NUBIGENUM* (Alpine *Oncidium*). *Nat. ord.*, Orchidaceae. *Lim.*, Gynandria Monandria.—Native of Ecuador, at an elevation of 11,000 feet on the western side of the Andes ridge. Flowers white and purple. (*Ibid.*, t. 5708.)

LONICERA STANDISHII (Standish's Honeysuckle). *Nat. ord.*, Caprifoliaceae. *Lim.*, Pentandria Monogynia.—Native of China. Flowers white. "A charming, fragrant, early-flowering Honeysuckle." It is a deciduous shrub. (*Ibid.*, t. 5709.)

TROPEOLUM—Mrs. Treadwell. Flowers deep scarlet. First-class certificate from the Royal Horticultural Society's Floral Committee. (*Floral Mag.*, pl. 385.)

ONCIDIUM MACRANTHUM HASTIFERUM.—Flowers golden yellow. Believed to be a native of Peru, and requiring cool treatment. (*Ibid.*, pl. 386.)

PERSIAN CYCLAMEN.—Purity, white. Delicate, white with pink base. *Mauve Queen*, mauve with crimson base. *Excellent*, white with crimson base. *Norolty*, white tinged with pink, base purple. *Firefly*, crimson. (*Ibid.*, pl. 387.)

ATACIA CRISTATA.—Native of the Delta of the Ganges. Novel and curious. (*Ibid.*, pl. 388.)

AURICULA Colonel Champneys.—"This remarkably fine Auricula was raised from the variety called Chapman's Sophia, fertilised by the pollen of Lightbody's Richard Headly. It belongs to the grey-edged class, and is remarkable for its large showy pipe, the ground colour of which is a bright violet, partaking of the shade of colour met with in Sophia, while the eye and paste are very round. The truss of flowers is large, bold, and attractive, indicating a free habit of growth and a robust constitution. We learn, moreover, that it is a variety which increases freely. There can be no doubt that

this will become a standard variety, for it is not only very distinct, but it is also one of the most attractive flowers in the Slough collection.

"A first-class certificate was made to it at one of the spring shows of the Royal Botanic Society. It has been shown again this season, on two occasions in great beauty, on one of which a further award was made to it."—(*Florist and Pomologist*, 3 s. i. 97.)

WARNING TO INTENDING EMIGRANTS.

UNDER the above heading in page 201 of the Journal I noticed a communication from "W. T. G.," which is calculated to mislead intending emigrants.

I am somewhat of a traveller, and have more than once traversed that portion of the United States between the head of Lake Superior and the Gulf of Mexico, and from the Mississippi river to the Atlantic Ocean, and, to complete my education, visited "W. T. G.'s" "happiest land upon earth," as well as some of his "most distant colonies." He claims to be a "horticulturist," and as I possess a smattering of art horticultural, like him I propose addressing horticulturists. Having travelled, and with eyes open, I contend that my conclusions are as valuable as those of "W. T. G."

With regard to the Pear on the Quince in the "western part of the State of New York," I can assure your readers that in the very locality mentioned are numerous nurseries, varying from 50 to 900 acres each, and each proprietor cultivates immense numbers of the Pear on the Quince. If the climate were not adapted to its growth they would abandon the culture. I unhesitatingly assert that when the Pear on the Quince is planted in proper soil, and receives proper culture, success is certain in any portion of the United States north of the 35th deg. of north latitude. If planted in a heavy undrained soil loss may be expected. I reside near the city of New York, and have under cultivation an orchard of upwards of eight hundred trees on the Quince, some of them planted more than eight years, and not one has been injured by frost, and I never heard or read of a Quince stock being injured by frost unless planted in an unsuitable soil. If space permitted I could give you positive facts regarding Pears on the Quince in many portions of the States—their size, age, and productiveness. If one person by injudicious selection of situation and soil happens to be unsuccessful, that is no reason why "W. T. G." should resort to an unqualified condemnation of a vast country with a diversity of climate, and in its adaptability to fruit culture unequalled. The "western part of the State of New York" is but a small portion of the United States, and ere "W. T. G." had given publicity to his opinions he should have traversed a larger portion of this vast country.

With regard to the Vine, I have a vineyard upwards of three acres in extent, and have visited numerous others in various localities. I endeavour to keep myself posted up on Vine culture, but never saw or heard of a case similar to that referred to by "W. T. G." If the soil were heavy, with deficient drainage, an accident might occur; but no sensible man would think of planting Vines in such a situation. If such accidents frequently occurred you would not find thousands of flourishing vineyards in the United States, and numerous nurserymen sending out their tens of thousands of Vines annually. Admitting that such a thing occurred annually in the colder portion of the United States, that is no reason why the intending emigrant should settle there, but, on the contrary, if he wished to engage in Vine culture, let him settle in a warmer portion of the country, where "W. T. G.'s" imaginary winter mean of 10° Fahr. could not be found.

For the information of intending emigrants I will give a few figures. The annual winter meeting of the Lake (Erie) Shire Grape-growers' Society was held at Cleveland, Ohio, from the 19th to the 21st of last February. Mr. Lewis, of Sandusky, read some statistics regarding the yield in 1867 in the vicinity of Sandusky, as follows—

Lbs. table Grapes shipped from Sandusky in 1867	1,822,000
Lbs. wine	250,000
Gallons wine pressed at Sandusky, Peninsula, Catawba	
Island, Kelly's Island, Bass Islands	470,000
Lbs. of Grapes from which the above was pressed	4,600,000
Total Grape crop of 1867, lbs.	6,622,000
Average yield per acre, lbs.	4,480

Strange as it may seem, the above yield was from Vines grown upon the eastern shore of Lake Erie, a portion of that lake forming the western boundary of the "western part of the State of New York;" and what is most remarkable, the inhos-

pitable region described by "W. T. G." Here we have statistics carefully collected from positive cultural results, and not a dark picture and wholesale condemnation based upon the misfortunes of a particular individual, who, probably, selected an unfavorable situation for his vineyard.

With regard to ground mice I plead guilty, and admit that like English hares and rabbits they occasionally prove troublesome; and careless culture and neglect furnish field mice shelter. If the owner of the orchard referred to by "W. T. G." had been posted up, he would have avoided his misfortune if he had been aware of the existence of field mice in such unprecedented numbers. A few spades of earth thrown against the trunk of each tree in the autumn would have prevented his misfortune.

"W. T. G.'s" remarks, based upon a solitary case, are calculated to lead intending emigrants to believe that Apples cannot be grown in the United States. My Apples, standard and dwarf, number 385, and in no instance has one of them been injured by mice. I have no hesitation in stating that in no other portion of the world, in accordance with the number of population, are so many large and thrifty Apple orchards to be found; every farmer, large or small, has his orchard. If these are facts, field mice cannot be very destructive. A solitary instance of unsuccessful culture is no evidence that field mice are so very troublesome. As an evidence of the results of Apple culture in the United States, I would advise "W. T. G." to visit Covent Garden Market, and inquire of vendors where they obtain their Newtown Pippins, Greenings, Northern Spys, and Baldwins. If still unsatisfied, let him visit Liverpool when they are unloading the New York steamers, and the delicious aroma proceeding from innumerable barrels of Apples will convince him.

"W. T. G." enters the field of climatology, and asserts that the "average mean during the winter months is about 10° Fahr." To clothe this statement with the mildest term, it is an error. The lowest mean during the winter months in the settled portions of the United States is 20° Fahr. This statement about the lowest mean would lead "intending emigrants" to believe that the United States is a hyperborean region, only adapted to the production of white bears and walrus. On the contrary, diversity of climate is the rule, and the intending emigrant can suit himself as regards climate, with a winter mean of temperature varying from 20° to 70° Fahr., and in the warmest portion with a minimum of 65° Fahr. The intending emigrant can settle in the north, where the Apple and dwarf Pear are a success, or in balmy and unequalled Florida, where he can shelter his new home with the Banana, Orange, Olive, and Pal'm.

The hedge business is the most amusing, for if the "enterprising English farmer" alluded to had inquired of the merest tyro, he would have been informed that the Hawthorn is not adapted to this climate. I have carefully examined hedges in various portions of England, but never saw anything to equal the hedges of Osage Orange, Arbor Vita, Norway Spruce, and Gardenia florida, which I have seen in this country. But the other day a friend was describing to me a hedge of Camellia japonica, 200 yards in length, compact as a wall, and stated that during the spring months it was gorgeous. If "W. T. G." had seen, as I have, hedges 6 and 8 feet high of the fragrant Gardenia, his ideas would not have been so cabined, cribbed, and confined.

"W. T. G." asserts that "for at least four months in the year not a spit can be turned, and it often happens that for the best part of six months stern winter holds everything with an iron grasp." It is self-evident that the opportunity for observation on the part of your correspondent has been very limited—confined to the coldest portion of the United States, and surely the intending emigrant is not compelled to follow in the footsteps of "W. T. G." I can assure intending emigrants that in other portions of the United States they may gather Oranges, Lemons, and Green Peas from November to March; early Potatoes by the 10th of March, and Melons and Tomatoes by the 10th of May, all from the open ground, and without the "boiler-power and piping" referred to by "W. T. G." If the intending emigrant dislikes the extreme north, and objects to have his cot surrounded by tropical fruit, he can select any climate to suit him between the winter means previously referred to.

For the information of "W. T. G." and intending emigrants I may remark that the winter mean of 10° Fahr. is found to cross the centre of Newfoundland, then about 60 miles north of Quebec, thence to the head of the Ottawa river, northern

margin of Lake Superior, and then in a north-westerly course until it crosses the 50° of north latitude.

Last, though not least, is a lengthy reference to insect enemies. Again I plead guilty, and would ask "W. T. G." What country is without them? Even the "happiest land upon earth" is troubled with these unwelcome visitors, and I fancy as much as the country with a winter mean of 10° Fahr. To prove that insect enemies do not destroy all trees and fruits, I need but cite the fact, that all railroads leading to our large cities run during the fruit season special daily trains for the conveyance of fruit alone. With regard to vegetables, I can assure intending emigrants that American markets are well supplied with vegetables of good quality and at a reasonable price, in despite of the numerous insect enemies.

"W. T. G." enlarges upon the enemies of the agriculturist, as though the English farmer had nothing to contend with. To prove that insect pests do not destroy all the grain, I can assure them that we raise enough for home consumption and annually export immense quantities to England and other countries.

If the picture painted by "W. T. G." is an unvarnished one, why is it that over 300,000 emigrants annually land in the United States, and but few return to fatherland? The majority are agriculturists, and settle on the broad and fertile plains of the west—the granary of the world. A few, through mismanagement or other causes, are unfortunate, return to their former homes, and misrepresent the United States. If positive and reliable data regarding the productions and climate of the various portions of the United States would interest your readers, it would afford me pleasure to furnish them. What intending emigrants require is reliable information based upon observations extending over a large portion of this vast country, and not confined to a limited area, with a winter mean of 10° Fahr.—AL FRESCO, *Passan, N.J., U.S.A.*

PROGRESS OF GARDENING IN NEW ZEALAND.

The following is a lecture delivered before the Horticultural Society at Canterbury, New Zealand, by Mr. Wilson, President of the Society. He is a nurseryman, and after a few preliminary observations, he observed that

On the present occasion he should confine himself to a rapid survey of the introduction of the principal trees and flowers which had been brought into Canterbury. The first tree he introduced was the *Salix babylonica*, or Weeping Willow. This was sometimes confounded with the *Salix Napoleon*, so called from its growing around the tomb of Napoleon at St. Helena. The Canterbury Willow derived its botanical appellation from that affecting passage in the 137th Psalm—in which the captive Israelites are represented as hanging their harps upon the Willows that grew by the banks of the Euphrates, when they refused to sing the Lord's song in a strange land. Lady Mary W. Montague, the wife of the then English Ambassador at Constantinople, sent some sprays of these trees to Pope the poet, who planted one of them in his garden at Twickenham, and from this tree have sprung all those now in England. The Willows introduced into Akaroa were some cuttings from those planted by Madame Bertrand around the grave of Napoleon, brought into that place by some of the early French settlers; but the Weeping Willow properly so called was of eastern origin. He had brought the first Willows from Wellington, and had given some to the late Archdeacon Mathias, who planted them in his garden at Riccarton.

The introduction of Walnut trees into Canterbury first took place in Akaroa, where they have thriven perfectly. They had first been brought into German Bay by the early French settlers. Upwards of 7000 plants had been cultivated there, and were at first sold at the rate of £12 10s. per hundred. He did not doubt that Walnuts would even form an article of export, so rapidly did the crops increase.

The French settlers, thinking that they were coming to a warm climate, had brought with them some plants of the Vine. Two of the varieties were the White Muscadine and the Black Hamburgh. These had flourished well, but the fruit was small.

The French had also imported some Olive plants, but although the trees had thriven and had attained a considerable size, they had not as yet borne any fruit.

The first Apples introduced were brought by Mr. Deans, and were the variety known as the Leathercot or common Russet; these he brought from Nelson in the year 1815. Only three trees arrived from that province.

The same gentleman had also brought the first Pear trees into Canterbury; and although some difficulty had at first been experienced with regard to them, his perseverance was rewarded by a good crop of large-sized Pears.

Mr. Deans was also entitled to the credit of being the first to bring Plums into the province, and now the finest and best sorts were to be found in it.

The Bishop-designate Jackson first imported timber and forest trees into Canterbury; but as he did not remain here he gave the plants of the Elm, Ash, Beech, and Oak to Mr. Deans, who planted them in his grounds, where they were doing well, and where he (Mr. Wilson) hoped that in process of time a forest rivaling those of the old country would arise.

Another important importation had been Keens' Seedling Strawberry; the honour of bringing this delicious fruit here was due to Mr. Guise Brittan. He (Mr. Wilson), had himself brought some from Auckland—in fact he had procured 3000 plants, and they were now distributed throughout the length and breadth of the province. Mr. Cotton, an English clergyman, had first brought them to Auckland; and it might be added that the same reverend gentleman was the first to introduce bees into that province. As the Strawberry plants were being brought here, a number perished, and only fifteen survived the voyage. From this sprung, as he had remarked, all those now in Canterbury.

Another importation which had greatly added to the beauty of our gardens was the Scarlet Hawthorn. It was a peculiarity of this tree, that although it produced abundance of haws they were generally barren, and it was necessary to propagate the plant by budding it on a common Thorn. They originally came from Auckland, and the large trees now in Dr. Stedman's garden were some of the original stock.

The useful timber tree, the *Pinus pinaster*, was introduced by the Rev. G. Cotterill, who gave some seeds brought by him from England to Mr. Davie, who planted them where Cookham House now stands. Some still survive in a garden near that spot, and are the largest in the province.

Dr. Earle, of the Grange, had been the first to cultivate the Blue Gum; this had sprung up accidentally from some seeds from Hobart Town, sown in his garden. He had carefully tended it, thinking it was a plant of the old English Honey-suckle, until an Australian settler saw it, and he recognised it as a Blue Gum, and this was the parent of all the Blue Gums in Christchurch.

The Norway Poplar and the Black Italian Poplar were brought here by Mr. Phillips, of Rockwood, in the year 1851. These were most useful woods for building purposes, as the wood can scarcely be destroyed by fire; it may smoulder, but it scarcely ever blazes.

The *Ribes sanguineum*, or common Red-flowered Currant, was introduced about the same time; as was the Passiflora, or Passion-flower. He had brought this plant from Auckland, where it grows to a large size; the berries are esculent. At the same time he had introduced the Akiaki from Akaroa.

The Portugal Laurel and the Common Laurel were acclimatised by Mr. Guise Brittan, who had planted them round his house, now the Lyttelton Hotel; and although the original plants had long since perished, some offshoots from them were still flourishing luxuriantly at Englefield. The same gentleman had also first planted the Arbutus—a fine ornamental tree, now growing in beauty also at Englefield.

The *Chianthus*, or Parrot's-bill, had originally come from Auckland; the original tree was now growing around Mr. Slater's house in Lichfield Street.

The first Rhododendrons were brought by Mr. Phillips, of Rockwood, who planted them in Mr. Jacobs's garden.

Holly was introduced by Mr. Richards. Mr. Webbe had planted the first Cypress—a most valuable tree, whilst Mr. Vigors had sown the first lawn with English Grass.

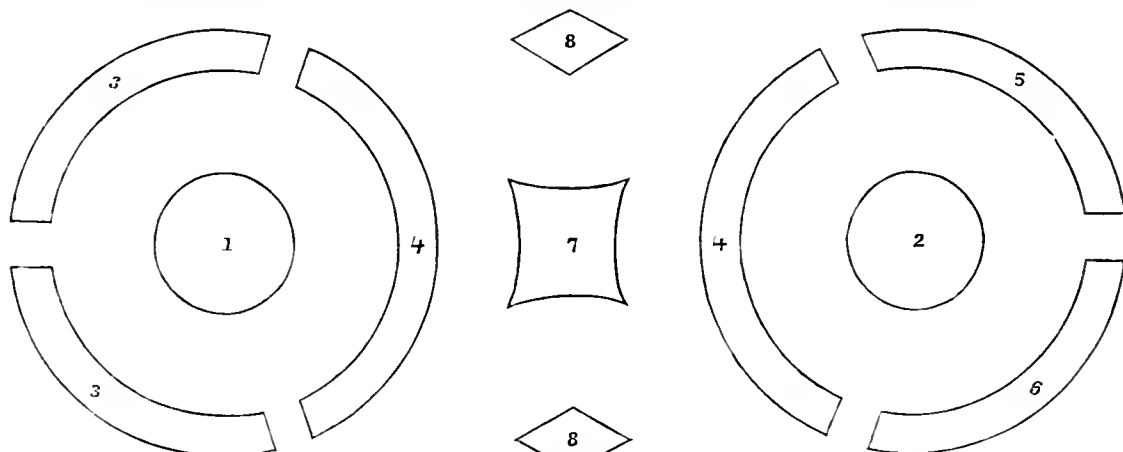
The Huntington Willow had been introduced by himself, as had also the common Double Daisy, Cowslip, and Primrose. The first Daisy in the province had been found growing in the street, where Mr. J. D. Macpherson's store now stands; whilst the first Lily of the Valley had been brought by the Rev. W. Aylmer.

The lecturer concluded by alluding to some plants which New Zealand had in turn supplied to England, whence had been derived so many fruits and flowers, mentioning amongst others some of the native Ferns and a species of *Ranunculus*—the *Ranunculus Traversii* (so called in honour of Mr. Travers), which he said now commanded a high price at home. To the late Archdeacon Mathias was due the credit of first forming those Gorse hedges which had proved both useful and ornamental—useful in sheltering the plants in the gardens, and ornamental from their luxuriant blossoms and growth. He must claim for himself the honour of having brought the ordinary and the Cape Broom into use for the purpose of fencing.

FLOWER-GARDEN PLAN.

IN reply to "MAXWELL," we approve of the north and south groups—namely, those to the right and left of the three beds 7, 8, 8; but as you have a uniform edging of blue Lobelia for the six outside clumps, it would much improve them if there

were a narrow string of *Cerastium* next the grass. Then of the three clumps, 7, 8, 8, the central one, 7, planted with yellow Calceolarias, would come in line with Mrs. Pollock Pelargonium on each side. To make the whole very effective, if



- 1, Pelargonium Countess of Warwick, edged with Amaranthus.
2, Pelargonium Bijou, edged on the outside with blue Lobelia.
3, 3, Pelargonium Flower of the Day " "
4, 4, Pelargonium Mrs. Pollock " "

- 5, Pelargonium Cloth of Gold, edged on the outside with blue Lobelia.
6, Pelargonium Golden Fleece " "
7, Calceolaria, yellow.
8, 8, Calceolaria Prince of Orange.

the climate is good enough fill that clump with *Colens Verschaffeltii*, and ring it with *Cineraria maritima* or *Centaurea candidissima*. If this cannot be done, Purple King Verbena

and variegated Alyssum will do very well. Then of the other two beds, one on each side, Prince of Orange Calceolaria might be outside, and a blue-coloured Verbena or dwarf Ageratum in

the centre. We know the change will be liked. The Coleus, if it thrive, will make the whole grand. As proposed, there will be too much yellow in line. We consider the foregoing a very excellent and simple arrangement.

NEW BOOK.

Synopsis Filicum : or a Synopsis of all known Ferns, including the Osmundaceæ, Schizæaceæ, Marattiaceæ, and Ophioglossaceæ (chiefly derived from the Kew Herbarium), accompanied by figures representing the essential characters of each genus. By the late Sir W. J. HOOKER, &c., and J. G. BAKER, F.L.S., Assistant Curator of the Kew Herbarium. London : R. Hardwicke.

WITHOUT any reservation, this is the most useful botanical work upon Ferns that has yet been published. It includes all the known Ferns of our globe, about 2400 in number, and groups them in seventy-five genera, the distinguishing characters of each of which are rendered readily recognisable by coloured plates. Of each species there is a description and brief history; and all being contained in about five hundred pages, it may be well included among the "handy volumes" of science.

Only forty-eight pages had been printed when Sir W. Hooker died; the remainder of the work was confided by his son, Dr. Hooker, for supervision and completion to Mr. Baker, and every page bears testimony to the care and ability with which he has executed the work he undertook.

WORK FOR THE WEEK.

KITCHEN GARDEN.

MAY is always a busy month in the kitchen garden, for young crops have to be thinned out, others have to be earthed up, and some have to be transplanted, watered, and shaded; while successional crops require to be sown more frequently. *Asparagus*, when the plants that were planted in March have pushed two or more heads each, the weakest must be regularly cut away as the strong heads appear, so that at the end of the first season not more than two, or at most three, shoots are allowed to come to maturity on each plant. When the ground has been properly prepared stretch a line, and take out a trench sufficiently wide and deep to allow of spreading out the roots, and cover the crowns about 2 inches. The roots should be carefully taken up, avoiding all cutting or injury, and any that are decaying should be rejected. During the growing season keep the ground free from weeds, and the surface free and open by frequent hoeings. A soaking of manure water may be given with advantage when the weather is dry. *Beet*, sow the main crop in drills 1 inch deep, and from 15 to 18 inches apart, covering with friable soil. If possible, select a dry day, when the ground is in good working order, for putting in the seed. Nutting's Selected and Henderson's Pine Apple are good sorts. *Celery*.—For transplanting, prepare a bed of rotten manure 3 inches deep, covering it to the depth of another inch with light sandy soil. Prick the plants out on this about 3 inches apart, water freely, and until they take hold of the soil shade them from bright sunshine. In the beginning of the month the Celery sown in February and transplanted in March will be fit to plant out in trenches 4 feet apart; the trenches to be filled to within 6 inches of the top with good moist rotten dung dug in, and the space between the trenches to be filled with Lettuce, Spinach, or Cauliflowers, planted 12 inches apart. A liberal supply of liquid manure should be given during their growing season. Some soot added to the water is an excellent stimulant occasionally, and all suckers must be removed. *Onions*, sow a patch very thickly on very poor gravelly soil, in order to obtain very large bulbs; these during the first year will make very little progress, and by the time they are ripe and fit for taking up they will not be larger than a hazel nut. Spread them very thinly on a dry shelf during the winter, plant them in March in rows 6 inches apart every way, covering as slightly as possible; and as regards gathering, housing, &c., treat them in the same manner as the spring-sown. Thin out young crops as soon as they are fit to handle. The thinning should be gradual, and always performed as soon as the young plants touch each other; for if they start weakly and are drawn they never become so robust and vigorous as when the light and air are allowed to play freely around them. Seeds of *Sage*, *Thyme*, and *Rosemary* should be sown

on a warm border, also *Sweet Basil* and *Marjoram* two or three times during the season, for use in a green state as well as for drying.

FRUIT GARDEN.

Proceed with the disbudding and removing young shoots from Peach and Apricot trees. Where the fruit of the former is too thick a number may now be cut off; those of the latter will be useful for tarts. In disbudding use a small sharp knife, as pinching the shoots off is apt to cause the wound to gum and canker. Where wood is wanted pinch off the tops of strong shoots, as several good bearing shoots may be thus obtained. Where a shoot will be too strong and only one is wanted, cut it back so as to secure one good lateral. When strong shoots appear where they are not wanted, or the tree is over-luxuriant, allow a number of them to run their full length, taking off the leaves from the under parts of the shoots as they advance. They will thus form channels for the extra sap, and will not shade unnecessarily the wood intended for bearing. In removing shoots at this season thin them gradually, so as ultimately to leave no more than can be exposed to the sun and air.

FLOWER GARDEN.

Rustic baskets and vases may now be filled with soil, which should be of a rather retentive nature, and the plants should be turned out when all danger from frost is over. Flowers of a drooping habit are the best suited for baskets. *Fuchsias* and the like, and *Caleceolaria floribunda*, with *Anagallis cerulea grandiflora* or *Lobelia* hanging down the sides of the basket, will answer well. Auriculas are fading fast, the majority of collections being out of flower. Where seed is not required the heads may be cut off not too low; put the plants in a shady situation, giving them the requisite attention as to water and cleanliness. They are too often neglected after blooming time. Tie up *Carnations* as fast as they require it; and if green fly make its appearance dust Scotch snuff slightly over them, or brush the insects off with a large camel-hair brush. Keep the pots free from weeds, which now spring up fast. Tie *Pinks* to sticks.

GREENHOUSE AND CONSERVATORY.

Keep down the temperature in the conservatory by all possible means, in order to prolong the flowering of the plants, and as the syringe would soon injure the appearance of plants in flower, the rose watering pot must take its place. Flood all spare parts in this house morning and evening. Continue to encourage the greenhouse plants to make rapid growth during this month, and keep the atmosphere always moist at night during this period. As few plants are allowed to flower in this house if there is a conservatory, the syringe may be used freely in the afternoons of fine days. Training and regulating the growth of all pot plants, as well as watering and killing insects, must be attended to while the plants are growing.

STOVE.

The usual routine of watering and keeping the plants clean and properly trained is all that is necessary here for some time. Some few plants may want shifting now and then, and all the young stock must be shifted by degrees as the plants advance, but no precise time can be pointed out for this work; the whole depends on the state of the plants and the means of the cultivator.

FORCING PITS.

This is just the critical time when a little oversight may cause much murmuring next winter. Look over your forcing plants the very first opportunity you have, and consider how many you may want of those most esteemed by the family, always making an allowance of 20 per cent. for failures among those forced in December.

PITS AND FRAMES.

These structures will almost be done with for this spring's planting, but they must not be idle, as it is time to commence propagating for next year. Cuttings of dwarf *Phloxes*, *Alyssum saxatile*, *Arabia*, &c., must now be put in. If there is a full supply of autumn-flowering plants to succeed the annuals, one of these pits may be used for something else. If the old *Cabbage Rose* is wanted on Christmas-day, take up half a dozen pot plants from the reserve ground, plunge them in old tan, sand, or anything else in one of the cold pits, and treat them like *Heaths* till next August, when you may turn them out under the shelter of a north wall, prune in September, and introduce them into a forcing pit on the 1st of October. Continue to increase the stock of *Verbenas*, *Heliotropes*, *Salvias*, *Fuchsias*, and all other plants that may be required for filling

boxes, vases, and blanks in the beds and borders in June.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE rain and hail of April 27th, followed as it was eventually by milder weather, has given all vegetation an impetus. The fields are putting on their summer livery, and the grass of lawns and meadows is growing as if by magic. With plenty of grass mowings we need never be at a loss for a little bottom heat, provided we keep that heat low enough down, or far enough from the roots of the plant we thus wish to assist. The fierce sun, and the drying winds of the three last days of the week, necessitated additional watering, or some shelter for all plants a little tender, or that had been newly turned out. A little shelter often does more good than the watering pail, when the ground about the roots is moist enough. A few evergreen twigs to shade and shelter newly-turned-out Cauliflower plants, &c., enable them to hold their own in such weather with little watering. We should never forget that the more we water the ground at this early period, the more we cool it, unless we manage to water with heated liquid, and that is no easy matter, where much watering has to be done.

Took the opportunity of hoeing well between the rows of Onions and Parsnips, the Carrots not having come up sufficiently as yet to enable us, as respects them, to go through that operation. Besides cutting up all the little weeds, the breaking up of the caked surface does good, more especially after the ground has become warm enough, as the loose surface keeps the ground cool beneath it, and the temperature of the soil more equal, as it absorbs less heat during the day, and radiates less heat into the free atmosphere at night.

Sowed a border with Kidney Beans, not of the kinds that we like best, but those we could obtain, as some of the best sorts were not to be had this season. These, Scarlet Runners, and Peas, slightly covered with red lead before sowing, have not been touched by birds, slugs, or snails. The black-backed yellow-bellied kind of the latter mollusk is very difficult to extirpate, as hardly anything will injure it, except what would likewise injure the plants. Planted out a nice piece of Dwarf Kidney Beans from 5-inch pots, four beans in a pot, without disturbing the ball, and will give these protection for a few weeks. A box or two with seedlings will be turned out separately in a few days, and these, too, will receive protection for a time at least, with a few evergreen branches. As already intimated, a fierce sun is as injurious to such crops when fresh turned out as a cold night. Contrary to our wish, we have had to find space for a row in 12-inch pots on a shelf in the late vinery—at least, for a time, for these plants seldom show insects until they reach the bearing period; but we had an accident with two previous crops, which in a night deprived us of good gatherings for a month or five weeks. Some rats had found their way into the pit by making a hole in the wall plate, and cut one sort as completely down as if a number of sheep had trampled them. The sort so treated was the White Canterbury, hardly a single leaf was left uncut and uncut. We were congratulating ourselves that the rats had shown some merciful consideration, as at first sight a fine lot of a cream-coloured bean just setting its pods, and with a dense mass of flower-buds open and opening, seemed untouched, but on opening the lights we found that though not a leaf or stem had been touched, not a single flower bud or young pod had been left. The intruders had mounted the stems, and the little sticks, and cleared off every flower bud as neatly as if it had been removed by small scissors, and all seemed as if they had been eaten, for scarcely a bud was left on the ground. By cutting the plants back we may obtain a second crop, but far from equal to the first. The difference made in the treatment of the two sorts is worth recording. But for the removal of the flowers and young pods there was nothing in leaves or stem to denote that this second lot of Beans had been visited by such intruders. After much trouble we only succeeded in trapping a young rat, for the Beans being grown over an open bed of manure and leaves, even a good ferret could help us but little. A rat will be hard driven, however, if he will consent to remain in a place where a ferret has been.

Much other work was of a routine character, sowing succession crops, pricking-out Celery and Cauliflowers, and watering the same when needful. The first-pricked-out Celery is now strong and good, and had the help of glass at first, but for three weeks or a month has merely some laurel boughs over it

to break the force of the sun's rays in imitation of what it would have had in its natural habitat, and its appearance would indicate that this is the treatment it most prefers. At an early period Celery will stand still in bright sun. It much likes a flickering shade.

Potted-off Cucumbers for frames, Gherkins and Vegetable Marrow for ridges, and attended to those bearing in pits and frames as previously detailed, much watering being wanted in such weather. The wind being keen and dry at times, we preferred that the atmosphere over the beds should rise 5° or 10° higher in temperature instead of giving much air, but that little was given early, so that the temperature rose gradually. In the bright days of Friday and Saturday the glass was dulled with the slightest sprinkling of water, just coloured with whitening. Some men can do this so nicely with the jet nozzle of a syringe, regulated merely by the finger, that the glass will be equally spattered, and not a single dot will be larger, and most much smaller, than the head of a common pin. Many lights can thus be gone over in a few minutes, and when the squares of glass are large some such slight shading is often of importance when such bright days succeed all at once a period of dull sunless weather. In this dry, bright weather we gave no front air to frames over hotbeds where a high temperature was needed, except a little to Melons in bloom and setting, as a little air right over them, however small the amount, assists the setting process.

FRUIT GARDEN.

Melons.—Rather a singular thing has happened here in a five-light pit heated by hot water, and that for a number of seasons consecutively. The plants in the three lights at the west end generally do very fairly, but those in the two lights at the east end, just as the secondary shoots come away freely almost as uniformly lose their first larger leaves, whilst those near the point will retain their natural healthy green colour. Sometimes the leaves will have brown spots, sometimes the brownness affects the edges of the leaves first, and gradually covers and kills the leaf. Sometimes we cut off these browned leaves along the stem for a length of a foot or 18 inches, bring the stem round again to the centre, and allow the point to grow outwards as a young plant. Sometimes we pull up the plants thus affected, and plant fresh ones, and we may even have to do this for a second time before we secure in these two lights fresh and vigorous growth. The cause has been a mystery to us, and remains so still. The pit is part of a range heated by two 3-inch pipes in front for top heat, and two 3-inch pipes in rubble below the bed for bottom heat. For this period the heat is sufficient, and we may conclude there is nothing in the heating, or why should the three western lights be little or not at all affected? Then we supposed that there might be some condensed deleterious vapour, but we used no dung, and even in general left the thickness of a common tally between the sash and wall-plate at night. Then, again, we surmised that the sun struck on the foliage when it was damp, and that the leaves were thus scalded, and that at least made us anxious to have the foliage dry before the sun reached it in force; but between the east end of the pit and a garden wall there is only the width of a walk, and therefore the sun strikes the western lights of the pit a considerable time before it gets over the wall to shine at all strongly on these two eastern ones. We have also examined the two sashes carefully, and though the glass is very common fourths, still we can perceive no difference between its quality and that of the other lights where no such phenomenon occurs. Over dung beds, and with sashes of the old-fashioned kind, and glass so bad that the like could scarcely be had now as a curiosity, we have witnessed no such appearance. We can decide on neither cause nor cure; for when we succeed at length in obtaining healthy growth it is entirely owing to perseverance, and we are as ignorant as ever of what enables us to cause the healthy growth at last. For three or four seasons the first plants in these two lights have suffered in a similar manner. In the case of all other kinds of plants we have observed no difference as to results beneath these two lights and the other lights of the pit. It is only in Melons that we have noted the difference. We may add that the soil in the five-lights is the same, and when the roots were examined there seemed nothing wrong with them. At present the matter is as much a mystery to us as how to keep away the Cucumber disease, or get rid of it when it comes. When we were visited with it we neither knew how it came or what took it away, or nearly so; and the only

palliatives we could find were poor fresh soil and very frequent planting.

Strawberries.—We have given a lot of Melon plants larger pots to stand in for a few weeks, as we have been forced to devote to Strawberries a five-light pit, that we meant to bring in for Melons, but which must wait a little. These Strawberry plants, showing bloom strongly, had stood in rather a shady place in the orchard house, and did well enough there as regards the production of flower trusses and until they began to open, when they needed more full light and to be nearer the glass. That we may be able to move the plants afterwards without injury we have set each pot on a saucer, the saucer filled with moss covered with rich compost. When pots are set on turf—an excellent plan—they should not be moved until done with. In clearing out to-day some plants which had finished fruiting, we were quite surprised at the strong pull that was necessary to tear the roots out of the turf into which they had run through the hole at the bottom. This fine lot will succeed those standing on turf and soil in the front of the first orchard house, which are setting beautifully; these again will be succeeded by two rows in the front of the late orchard house just opening their flower buds; and a lot more still later, we will place on the north side of a wall, to be forwarded if we think necessary afterwards, to prevent any interval between those in pots and those in the open air. Some blooms of the earliest, as Black Prince, are just opening. This may tend to show beginners that some thought is required to keep up a regular supply—a matter of more importance than gathering great quantities at a time. These Strawberries in pots have been assisted chiefly with soot. Sometimes as much as could be taken between the thumb and finger was strewn on the surface of a pot, and sometimes clear soot water was given alternately with clean water and drainings from the farmyard not over-strong. We have hoed thinly the surface of the ground and mulching between the Strawberry plantations; and had we time and plenty of materials we would rake off the roughest of the mulching, and strew lime thinly along the ground to drive away slugs and snails, and then when the lime was turned into mild chalk we would scatter some soot over the ground, not minding if a little fell on the plants, as the first rains would wash that off before the flowers opened much. Taking all in all, soot is excellent for Strawberries. The syringing with clear soot water has as yet kept the Strawberry plants in the orchard houses free of green fly, as that could be done more freely there than in other places where the green fly made its appearance, as alluded to.

We never saw Apple and other blossom more beautiful than it is this season. Gooseberries seem loaded, as, thanks to a little gunpowder, and other means, we held our own with the birds this season, except in a little orchard, where they had all their own way.

In the hot weather, floors, stages, walls, &c., in Peach houses, vineries, &c., were kept more than usually damp during the day, to prevent the temperature rising too high without giving too much parching air.

ORNAMENTAL DEPARTMENT.

Auriculas should be watered with great care, so as not to spill a drop on the flowers, and when manure water, especially, is used, not a drop should light on the foliage. This is a safe rule to apply in all cases of watering plants with manure water. Regulated corridors and conservatories afresh. It is a bad plan to wait for a great job of this kind being done; it should be attended to daily, so that all plants past their best may be removed, and be followed by plants coming to their best. Nevertheless, the most of us, with this daily attention, find that there are times when we must have a more general clearing-out. For instance, Cinerarias are still showy and useful, but many are past their best, and these were set against a wall and protected by a hurdle with a few twigs drawn through it, and these plants will furnish plenty of cut flowers. Camellias over were moved to the vineries to accelerate growth, and their places supplied with Fuchsias, Scarlet and other Pelargoniums. The faded Azaleas were put by themselves, and those in full bloom were set in the best positions. Ferns were fresh potted and regulated, and much time taken up in giving room to, and getting bedding plants hardened off, for which every turf pit was more than called upon. In all plant places during the week, the drying wind and the scorching sun were prevented from acting injuriously, by a little shading, damping the floors and stages, and giving less air than in quieter weather. The Fern house was shaded by giving the glass a fair coating of whitening and milk, which will remain for the season. Scars

in the glass in orchard houses were sought for and daubed with a little paint.—R. F.

CRYSTAL PALACE.—The programme for the new season of the Crystal Palace had just been published. As the Palace was opened in June, 1854, the present will be the fifteenth season, and no greater sign of its vitality can be given than the liberality of the arrangements which the directors are enabled to offer to the season ticket holders. The policy which has been pursued for the last three years of admitting season ticket holders on all occasions, receives further exemplification this year by the season ticket being made available during the four days of the Handel Festival. As heretofore, the Great Flower Show on the 23rd May, and the Rose Show on the 20th June, will be the chief horticultural attractions of the metropolitan season.

COVENT GARDEN MARKET.—MAY 6.

A few brilliant days have had a marked effect upon our market in a threefold sense—viz., improvement in quality, quantity, and demand. A few early Peaches of excellent quality are offered, and command fair prices. All other articles remain much the same. Among foreign imports we may include Apricots, and Cherries. Heavy consignments of new Potatoes from Lisbon and Cornwall have come to hand this week in good condition.

FRUIT.

	s.	d.	a.	d.		s.	d.	a.	d.
Apples 1 sieve	3	0	5	0	Melons..... each	0	0	0	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges 100	3	0	7	0
Chestnuts bush.	0	0	0	0	Peaches.....doz.	36	0	48	0
Currants..... 1/2 sieve	0	0	0	0	Pears (dessert) .. doz.	0	0	0	0
Black do.	0	0	0	0	Pine Apples lb.	8	0	10	0
Figs doz.	12	0	18	0	Plums 1/2 sieve	0	0	0	0
Filberts.....lb.	1	0	0	0	Quinces doz.	0	0	0	0
Cobs..... lb.	0	0	1	0	Raspberries.....lb.	0	0	0	0
Gooseberries .. quart	0	6	1	0	Strawberries.. per lb.	6	0	16	0
Grapes, Hothouse.. lb.	8	0	15	0	Walnuts..... bush.	10	0	16	0
Lemons 100	8	0	12	0	do. per 100	1	0	2	0

VEGETABLES.

	s.	d.	a.	d.		s.	d.	a.	d.
Artichokes doz.	3	0	4	0	Leeks bunch	0	3	0	0
Asparagus 100	3	0	8	0	Lettuce per score	1	0	1	6
Beans, Kidney ... 100	1	6	0	0	Mushrooms ... pottle	0	9	1	6
Beet, Red doz.	2	0	3	0	Mustd. & Cress, punnet	0	2	0	0
Broccoli bundle	0	9	1	0	Onions..... per bushel	3	0	5	0
Brus. Sprouts 1/2 sieve	0	0	0	0	Parsley.....per sieve	3	0	4	0
Cabbage doz.	1	0	1	6	Parsnips doz.	0	9	1	0
Capiscums..... 100	0	0	0	0	Potatoes..... bushel	4	6	5	6
Carrots..... bunch	1	0	0	0	Kidney do.	4	0	6	0
Canflower doz.	2	0	5	0	Radishes doz. bunches	0	6	0	3
Celery bundle	1	6	2	0	Rhubarb bundle	0	4	1	0
Cucumbers..... each	0	6	1	6	Savoy doz.	0	0	0	0
Endive doz.	1	0	0	0	Sea-kale basket	0	0	0	0
Fennel bunch	0	3	0	0	Sballots lb.	0	8	0	3
Garlic lb.	0	8	0	0	Spinach bushel	2	0	3	0
Herbs bunch	0	8	0	0	Tomatoes..... per doz.	3	0	4	0
Herbsradish .. bundle	3	0	5	0	Turnips bunch	0	4	0	6

TRADE CATALOGUES RECEIVED.

J. Carter & Co., 237, and 238, High Holborn, London, W.C.
—Carter's List of Bedding and other Plants for 1868.

Eleombe & Son, Church Street, Romsey.—List of Select Flowering Plants.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix upon the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

BOOKS (A Subscriber).—We know of no separate work on the Azalea and Camellia. Keane's "In-door Gardening" gives weekly directions for their treatment throughout the year. You can have it free by post from our office if you enclose twenty postage stamps with your address.

ROYAL HORTICULTURAL SOCIETY'S SHOW AT LEICESTER (T. Cottman).
—It will be held at Leicester. Advertisements will appear respecting it. You can obtain information from Mr. Richards, Assistant Secretary, Royal Horticultural Society's office, South Kensington.

PELARGONIUMS (*H. J. S.*).—Your Pelargoniums are no novelty. Several of the marbled section, such as *Empress of the French*, the *Duke of Wellington*, &c., have this bad habit of producing abnormal trusses. Caladenia well grown usually produces leaves of the size you mention. (*J. I. jun.*).—Not at all uncommon; too many like it for us to attempt to name it.

PANSIES (*Sarniana*).—There is nothing remarkable in your seedlings. The light variety is the best, but, like all this fancy section of Pansies, wanting in substance. Hundreds of seedlings of the same character are in cultivation.

VINE LEAVES TURNING BROWN (*Hard-up*).—We could not satisfy ourselves that there was anything on the Vine leaf, though in several places it looked as if attacked by red spider. If there is merely the brown watery appearance on the leaves, that will most likely remedy itself. It is generally the result of too much moisture at the roots, and a damp atmosphere inside, which prevents the foliage perspiring freely. Give a little more fire heat in dull weather, and keep the air of the house a little drier.

FLOWER GARDEN PLANTING (*M. Gunzog*).—With your proposed materials we would alter the arrangement thus:—No. 5, place two or three plants of *Tropeolum canariense* against the Plum tree in the centre, and along with it four or five plants of the *Convolvulus major*, allowing these all to run somewhat wildly together, then just one row round of the *Perilla*, pruned to the right height to meet the Brilliant Pelargonium. Amongst the Pelargoniums, at equal distance, have four plants of dwarf *Cannas*, and then your broad edging of *Cerastium* would be effective. With regard to the beds 3 and 2, we would plant them with *Madame Vaucher* Pelargonium, and give a wide verge of *Golden Chain*; 1 and 4 we would plant with a low yellow *Calceolaria*, as *Andrea floribunda*, and give a broad edging of *Lobelia speciosa*; 3 and 2 would be improved with a row of *Purple King* between *Madame Vaucher* and the *Golden Chain*. In fact, a low *Verbena*, purple or mulberry, would be better than the *Golden Chain* unless it do well.

WATERING AND TEMPERATURE IN GROUND VINERIES (*Ura*).—Your Vine in a ground vinery will, after growing freely, require much watering, and if manure water be afforded all the better. If a novice at such watering, place half a peck of superphosphate of lime before watering over the ground where the roots are, and in a fortnight follow with a quart of soot. When a ground vinery becomes too hot a little more ventilation should be given by opening the spaces at the sides more. In a very hot day we would not be alarmed if the thermometer rose to 100° full in the sun below the glass; but it will be as well if it do not rise much above 90°. Shading would neutralise all the benefit of the glass covering. With air constantly, it is amazing the heat a Vine will bear when the heat rises gradually, and there is no confined atmosphere or moist vapour.

MELON CULTURE (*J. T. S.*).—As to Melons and dung beds see "Doings of the Last Week" for two or three weeks past. The plan of the flues will answer, but not well if the furnace is to be above ground. Have it a foot or 2 feet below it. If the flue is to stand on the level of the ground have the going and the return flue in a chamber, covered over with flagstones, slates, or slabs of wood. If slabs of wood be used, place them across roughly, 6 inches at least above the flue, and leave spaces between every two slabs, which fill with brickbats, and then roughly plaster over. On these slabs place soil, and at back and front have openings to let the heat ascend, furnishing them with plugs to regulate the heat at pleasure.

PROLONGING THE FLOWERING OF NASTURTIUMS (*Tropeolums*) (*Flora*).—We have no difficulty in inducing the dwarf *Tropeolums*, as *Tom Thumb*, &c., to bloom all the season, merely by picking extra leaves off and preventing seeding much by gathering exhausted flowers. However, you may plant dwarf *Salvias*, though we do not know which you mean. If the *Tropeolums* do not please, we would plant the *Salvia* or *Scarlet Pelargoniums* at once.

PROTECTING TAGETES FROM SLUGS (*Idem*).—Nothing is so effective for freeing a bed from slugs as going over it before bedtime with the help of a lantern. The next best plan is laying down fresh brewers' grains in little heaps, and gathering the slugs from them early in the morning.

PLANTS FOR SPRING FLOWERING (*Idem*).—The *Alyssum saxatile* sown in the end of July will scarcely bloom early in spring. Sweet and Variegated *Alyssum*, if the latter be kept protected, will do. The *Mule Vink* would also require more time, but that is most to be depended on from cuttings. The *Myosotis*, *Snappdragons*, *Silenes*, *Wallflowers*, and *Stocks* will do well; but the last will need protection in winter.

CLEMATIS JACKMANNI (*C. P.*).—We are unable to explain why the *Clematis Jackmanni* has lost its natural green colour. It may regain it.

ZONAL PELARGONIUMS (*A Subscriber, Glenharvon*).—We could not identify them as you suggest. They are now too numerous and too nearly alike. Those you mention are very good.

CUTTING-BACK MAIDEN TREES AFTER PLANTING—**GROWING WINTER CUCUMBERS** (*H. E.*).—Maiden Peach, Apricot, and other trees planted against a wall in March, should be cut back according to the training intended. If to be trained in the fan-shape we would cut back each tree in the end of March to, say, four buds from the bud or graft, so as to obtain five shoots instead of one, two on each side, and one for the centre, to be cut down next year. Did we mean to make cordons of them we would merely shorten the shoots. You need not despair of the Vines yet, but, of course, much depends on the mode of transplanting. Cucumbers may be grown in winter with bottom heat by means of a flue in a chamber, but there must be outlets under control for letting the heat into the atmosphere of the place, and in that case the flue must be sound. You will do little good without a space between the flue and the earth.

ORCHARD-HOUSE PLUMS NOT SETTING (*C. P.*).—The Plums would not set well in that heat unless air were given—even a little all night.

PEACH-TREE LEAVES BLIGHTED (*A. M. W.*).—The best thing to do with such blighted Peach leaves is to remove them gradually, so as not to injure the tree, and fresh green leaves will take their place. We cannot account for such leaves without knowing more about the trees.

COVERING THE WALLS OF A FERNERY (*E. Z. A.*).—We advise you to cover them with the small-leaved Ivies, both green and variegated. These would thrive and be very handsome all the year round in an unheated fernery. We presume your walls are low, and that plants of compact,

close leaf-growth are required. We recommend *Hedera helix digitata*, minor *Donerailense*, minor *marmorata*, *marginata* *Cullisi*, *marginata* *pulchella*, *tsurica*, minor *lutes*, *chrysophylla*, *marginata* *elegans*, *gracilis*, *marginata* *argentea*, and *aureo-maculata* minor. You may procure the above and the *Golden-edged Ivy* through any nurserymen advertising in our columns.

RADISH CULTURE (*Alice*).—Radishes prefer a rich light soil. The ground cannot be too well dug, and should be broken fine, and a good dressing of very old manure or leaf mould well mixed with it. The situation should be open, and not shaded in the least. To have good Radishes the soil must be well pulverised. The surface should be made fine and the seed sown rather thinly, for if the plants come up very thickly and are so allowed to grow, good Radishes will never be produced. Cover the seeds with half an inch of fine soil. If the weather be dry give a good watering a day or two after sowing, and if the weather continues dry give a watering every evening. If the weather be showery, of course watering will not be necessary. For summer use the Turnip-rooted Radishes are best; the long-rooted are best for spring, early summer, and autumn use.

PRUNING LAURELS (*Idem*).—Your Laurels being large, now would be the best time to prune them, as they would then have an opportunity of making a good growth this season. If they are not required to be cut-in much, the best time is early in June, and go over them again in August, shortening all irregular growths.

REMOVING THE FLOWER STEMS OF ARUMS (*Idem*).—The flower stems of Arums and all plants should be removed as soon as the flowering is past, unless seed be wanted, then, of course, they must remain. Allowing the flower stems to remain only weakens the plant.

PEAR TREES UNFRUITFUL (*O. C. G.*).—We are unable to account for your Pear trees being unfruitful, the aspect being good. We presume they grow vigorously. We would stop all the shoots on the principal branches at the fourth leaf, except the leaders of the branches, which must not be stopped at all. Take out the points when the shoots stopped have made three leaves, and continue to do so throughout the season up to September, after which stopping must no longer be practised. We would further, towards the end of October, take out a trench round each tree, 3 feet from the stem, and work under the ball, cutting off all roots that go down deeply, removing the loose surface soil with a fork, and in this way proceed until the tree could be lifted, preserving as many of the fibres and small roots as possible, and allowing as much soil to adhere to them as they would carry. We would then lift the tree, clear out the soil to a depth of 2 feet, give the bottom of the hole a slight inclination from the wall, and place on it 3 inches of lime riddings, or equal parts of lime and coarse gravel mixed so as to resemble mortar. After ramming hard we would put on another layer 1½ inch thick, and make very firm with a wooden rammer. Place on this 6 or 9 inches of brick and lime rubbish from an old building, the older the better, and on that a layer of turf, grass side downwards, then a few inches of chopped sods, on which place the tree, spread out the roots and place soil amongst them, not covering the uppermost roots deeper than 3 inches. The soil may be the top 3 inches of a pasture on a rather strong yellow loam, and should be chopped rather fine with a spade. Each tree will stand on a small cone, and the ground will slope from the tree outwards. Secure the branches to the wall, give a good watering, and place 3 inches thick of fresh stable litter round each tree as far as the hole extended. The trees are best lifted just when the first indications of the leaves falling appear. Cut-in all the side shoots or laterals, whether stopped or not, in November, after the leaves have fallen, to within half an inch of their base, leaving the spurs entire. We would advise the same treatment to be continued in the following year, only a few good waterings should be given in spring and early in summer, and the lifting must, of course, be omitted. We think you may be sure of a good crop within two years, and you will have more in one season from your present trees than you would in half a dozen years were you to root them up and plant trees on the Quince. The Pear on the Quince stock is very productive, comes into bearing early, and produces fruit of fine size and quality. We grow trees so worked largely, and have planted a tree of them between every two permanent wall trees, which last are on the Pear stock, and are what we recommend for walls of greater height than 10 feet. On lower walls the Quince stock is best, and the Quince has the advantage of succeeding in soils where the Pear does not thrive. Some sorts of Pears do not succeed on the Quince well, and of those you name, *Jargonelle* does not succeed so well as many others, but *Duchesse d'Angoulême* does admirably. The Quince is the best stock for inducing early productiveness in Pears worked upon it.

DIVIDING IXIAS (*S. H.*).—It is now too late to divide the roots of *Ixia*. It should be done at the time of repotting, the plants being left undisturbed in the pots after the foliage decays until the time of repotting. The balls of earth being then carefully broken, the bulbs can be dressed and divided without injury. October is the best month to perform this operation, the earlier in the month the better.

PLUM, PEAR, AND APPLE LEAVES INJURED (*A Ten-years Subscriber*).—Your specimens exhibit unmistakable evidence of the injury resulting from the cold nights on the early vegetation we have had this season. We cannot advise a remedy. Yours is not a solitary case, trees never promised better. Our neighbours complain of their fruit prospects; their trees are damaged by cold followed by swarms of aphides. The way to destroy them is to syringe the trees, and whilst wet to dust them with tobacco powder, which should be forced on the under as well as the upper side of the leaves, there being distributors on purpose.

CAMELLIAS INFESTED WITH APHIDES (*Idem*).—Dust the plants lightly with tobacco powder, and wash it off within three hours, wetting the plants before dusting. The tobacco powder will destroy the aphids within an hour. The tobacco was not good, or the house was not sufficiently filled with smoke, otherwise the insects would have been destroyed. As the leaves are sticky we would advise your washing them, as well as the shoots and branches, with a sponge, using a solution of soft soap or Gishurst compound at the rate of 4 ozs. to the gallon of water, as we think you have scale as well as aphides.

REPOTTING CAMELLIAS (*Idem*).—Now is a good time to pot *Camellias*. Do not disturb the roots much. We prefer, however, to repot earlier—immediately after the flowering is over. If done now give a slight increase of heat, and a moist atmosphere with shade from hot sun.

GREEN FLY ON PEACH TREES (*A Lady Gardener*).—The best remedy is to dust the trees with tobacco powder. They should first be syringed

and made wet, and then the powder should be forced with a distributor upon the under side of the leaves as well as over them. It is not well to syringe the trees when in blossom, but a slight wetting will not do any harm. The trees should be dusted with the tobacco powder upon a calm day, and in the evening. One good dusting will be sufficient if it be effectually performed, or so as to reach all the insects, for the tobacco kills all it touches. The trees may have a good syringing with water any evening within a week. The dusting may be practised as soon as the trees have set their fruit. A little fire heat may be afforded your recently lifted Vines during cold dull periods throughout the summer, avoiding a dry atmosphere. They cannot be too gently excited.

CALCEOLARIAS FAILING (*A Constant Reader*).—We entirely disagree with you as to the disease being occasioned by putting the cuttings in cold frames. We remember the time when Calceolaria cuttings were invariably inserted in pans, struck, and wintered in an airy greenhouse. There was even then the Calceolaria disease, and it has only shown itself more of late years from the greater number grown. It certainly is many years since Mr. Fish first propounded the practice of wintering Calceolarias in cold frames. It is a practice we have followed for many years, and with the best results. Our practice is very simple. We make ready a place in a sheltered open situation, putting a few inches of lime riddings on the ground and ram quite hard. Worms do not come through that, and we then set the frames on bricks laid flat. Coarse gravel is then placed all over the bottom to the depth of 3 inches, and next an inch or two of coarse compost, and 3 or 4 inches of finer, which consists of two-thirds loam and one-third leaf mould, and then from 1½ to 2 inches of rather coarse sand. The cuttings are put in 1½ inch apart every way,

a good watering being given. Ashes are placed against the sides of the frame all round, plenty of air is given in mild weather, and protection is afforded from frost. Early in March if the weather is not frosty, the points of the cuttings are pinched out, and in the beginning of April we make trenches as for Celery, only 4 feet wide, with 3-feet alleys between them, and put in plenty of well-rotted manure and leaf mould, mixing these materials well with the soil. The plants are planted in rows across the beds, 6 inches apart from row to row, and 3 inches from plant to plant. A good watering is applied, and then water is given sparingly for a time until the plants are growing freely, when abundance is afforded. They are protected from frost by old lights or mats resting on spars placed across the trenches. The first week in May the plants are again stopped, and we have dwarf bushy plants and so strong that any one would make a dozen such as you enclosed to us. Your plants are drawn, weak, and badly rooted, and never will make good plants.

GRAPES SEVERELY SPOTTED (*C. S.*).—The berries were not sufficiently thinned. Cut out every berry that shows a spot, and thin away one-third of the remainder. The roots of the Vines are sluggish, they should be kept warmer, be watered with tepid manure water, and the house freely ventilated.

INSECTS (*Howarth Ashton*).—The bee sent is one of the Andrenidæ, or short-tongued bees (*Andrena ciceraria*), which make their nest by burrowing in sandy places in the spring. They are solitary in their habits of nest-making, although often found flying together in numbers over the spots they have selected. (*Subscriber, Beaminster, Dorset*).—Your small, red-spider-like insect is one of the mites, *Trombidium holosericeum*. It is quite harmless, feeding upon more minute insects.—W.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending May 5th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 29	30.061	30.015	57	48	51	49	S.	.00	Cloudy; overcast, very dull; fine, cloudy at night.
Thurs. 30	30.145	30.024	59	46	53	49	N.W.	.00	Fine, cloudy; clear and fine; fine, cloudy.
Fri. .. 1	30.190	30.171	68	51	53	49	S.W.	.00	Overcast; fine, cloudy; overcast at night.
Sat. .. 2	30.154	29.470	69	35	54	50	W.	.00	Clear and fine; fine; clear and fine.
Sun... 3	30.175	29.834	82	44	54	50	S.W.	.00	Very fine; clear and fine, very hot; very fine.
Mon... 4	30.617	29.905	66	39	56	52	S.	.00	Hazy; fine, bright sunshine; fine, but cold.
Tues. . 5	30.143	30.067	60	36	56	53	S.W.	.00	Overcast, cold wind; hazy; fine, very cold wind.
Mean	30.128	29.926	65.85	39.65	53.85	50.28	..	0.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

REARING CHICKENS.

I WAS much pleased with "Nemo's" communication in the number for April 16th, and beg to tender him my thanks for the instruction imparted; but in concluding his remarks about the chilling of eggs, he says, "In cold weather half an hour off the nest is too long, though double that time will not kill the chicks in the eggs in May," clearly showing that even "Nemo" does not attend to his sitting hens so well as he might. This has led me to suppose that many, though thoroughly understanding poultry, do not so thoroughly understand rearing, and do not carry it out systematically.

In the directions I am about to give I do not claim the merit of originality. The method is due to M. Jacque, the editor of "Le Poulailleur," but having fairly tried it against the natural system I can testify to its great superiority in many respects. Its advantages are a greater average of chickens from a given number of eggs, more robust chickens as a rule, a more equal number of chicks to the several mothers, and lastly, little or no distress to the hens.

I must state before entering into detail, that my poultry-keeping is carried on in the middle of a town with a population of thirty thousand; it is not, therefore, pursued under the most favourable circumstances.

When a hen takes to her nest she is the same evening removed from the yard to a (sitting) room, into which only a half light is admitted, and there kept on dummies for a few days until two or three hens are broody. I prefer three or more to two. They are placed in separate covered hampers 2 feet long and 1½ foot wide, in which clean new hay has been spread. Each basket has attached to it a linen label bearing the date of sitting, the name of the hen, the number of eggs, with the date upon which chickens are due, thus—

BETSEY.—February 29.

14 Hondans,

Due March 20.

also a clean piece of old flannel.

Every morning at the same hour each basket is opened in turn, the hen taken out and placed under a coop, being previously supplied abundantly with food, both soft and grain, and with clean water. Fifteen minutes, neither more nor less, are allowed for feeding. Whilst the hen is off the nest the eggs should be kept covered with the piece of flannel, and having put all the sitting hens to feed, each nest should be visited in turn to ascertain that no casualties have occurred; and if any eggs have been broken turn the rest out, put in clean hay, and cover up again as quickly as possible.

On the sixth day the hens should have an extra ten minutes allowed them, and should be given an opportunity of dusting themselves whilst the eggs are being examined for chickens, which is done by enclosing a lighted paraffin lamp in a box, in one side of which a hole about the size of an egg has been made. To this hole each egg is applied in turn, and returned to the nest or rejected, as it proves to be barren or otherwise. This should be done in a dark room. When a great proportion of the eggs turn out barren, a complete sitting should be made up to one or two of the hens, and the rest kept upon dummies for a few days till a fresh set of hens is ready; hence the greater the number of hens put to sit on a given day the greater the convenience.

On the twenty-second day the baskets containing the hens and chickens are brought to the light, the chickens reckoned, and regularly distributed between the hens. Some bread crumbs for the chickens, and grain for the hen, are put in a saucer at one end of the basket, and the whole taken back to the half light till the twenty-third day, when they may be turned out where it is intended to rear them.

The above directions may seem complicated and unnecessary, but in practice will be found to facilitate the work, prevent many mishaps, and, consequently, increase the percentage of chickens, whilst the mothers will turn out with their broods much less exhausted, and consequently better fitted to take care of them, than if left to sit closely for several days, as many, and those the best sitters, frequently do, and then get up and stay off the nest for half an hour or an hour, which, if it happen to be a cold day, may spoil the eggs or make the chickens weakly.

I trust "Nemo" will not feel offended at my seizing upon this part of his well-written article, and hope he will point out any error I may have unwittingly fallen into. I inferred from his remarks that chickens were not so numerous as usual this season; I as yet see nothing exceptional in the chicken season. These are the results of my attempt so far:—Five

mothers are now rearing fifty-four chickens; many deaths have already occurred, some of the broods being six weeks old, but the numbers stand as above this day April 28th, 1868.

Buckwheat is here the favourite food with both adults and chickens. When mixed with other seeds, such as oats, wheat, and barley, it is invariably picked out first.—*VERITAS, Turf Bank, Jersey.*

GAME FOWLS.

I THINK "NEWMARKET's" remarks in reference to the good points of Game fowls are somewhat prejudiced, and contrary to the generality of modern ideas. It is possible he will admit that birds exhibited now by a few of our most noted breeders of Game fowls are very far superior, both in feather and other properties, to birds of former periods, are bred generally with more care, and, I believe, are as deep game as those bred when cock-fighting was in its zenith. Well-matured progression in the art of breeding is the only safe way of arriving at perfection, and not adhering so closely to old practical theories. The high position our shorthorns, our race horses, pointers, and greyhounds have attained has resulted from the spirited and energetic efforts of breeders, who have discarded the "rest and be thankful" maxim. Breeders of this class well deserve the thanks of the public for the improvement of our breeding stock.

I do not agree with "NEWMARKET" as to the inferiority of our present Brown-breasted Reds in comparison with the old gipsy-combed birds. I consider the present race of birds far superior, both in feather and other points. The dark-bodied hens, also, when slightly streaked with red on the breast, are far handsomer than the brown-bodied hens. They also breed very true to colour, are as game, and quicker fighters. The old Shropshire Brown Reds, were, I believe, a very slow bird, but a cross of the Pile, Black-breasted Red, or Duckwing, has produced quicker fighters, brighter and richer in feather and face, nor have they suffered deterioration in other respects.

My only objection to birds of the present day is whenever there has been a tendency to produce undue size or legginess, and I fancy this fault is fast fading away. The judgment at Leeds, Halifax, and other places, has for the most part been in favour of birds of quality, independent of great size, and this is as it should be. I do not advocate the interests of every small bird, nor do I wish to see undue size take precedence.

In regard to "NEWMARKET's" remarks as to the colour of legs, I think his opinions have changed since 1857. It he will refer to *THE COTTAGE GARDENER* of that period, volume xvii., page 372, he will find the following passages in one of his own articles, "I cannot agree with him (alluding to another correspondent), in liking white or blue legs for any variety of Game fowl, they being too much like the common barndoor fowl, the legs of which are nearly always white or blue. I consider a bright yellow-legged black-breasted red cock to be the perfection of a Game fowl. I myself like to see the skin yellow, but then the flesh is invariably white, I fancy the yellow-skinned birds are the fiercest." "Again, in volume xviii. of the same year, page 125, the following passage occurs. "As to legs I cannot change my opinion, and would not keep a white or blue-legged Game fowl . . . I must agree with 'W.' that white legs do give a soft appearance to Game fowls."

My own opinion is that all light-coloured birds should have yellow legs, these harmonising best with the different shades of colour, the darker birds always legs of a darker hue; but I would not say that the colour of the legs has any influence upon the fighting qualities, although a few old cockers are still favourable to white-legged birds. I feel no hesitation in saying, that if I were to canvass the opinions of different breeders and keepers of Game fowls I should have a majority in favour of the whip tail. I also think that it would be absurd in me to assert, that the form of tail had any directive influence upon their courage. Some people are opposed to the slightest innovation, nor will any enlightened precedent induce them to acknowledge any improvement established by those who are eminently distinguished for their abilities through repeated intercourse with those following the same avocation.

In regard to the Black-breasted and Brown-breasted Reds, these were never bred to more perfection than at the present time, nor do I think the Black-breasted Reds have been judged with more care and correctness than other kinds. Perhaps they may have been a little more popular of late. Duckwings, Piles, and other colours have not so generally maintained their position so well, although occasionally we see some excellent

birds. Perhaps I shall not be open to contradiction if I state that the present breed of Game fowls owes a great deal to the Malay cross, which has given the birds a loftier and more majestic appearance, with a longer neck and head, and finer carriage. The coarseness and wartsiness has also been softened and toned down by judicious crossing. Birds of this class surpass in general contour the old style of Game fowl for exhibition purposes.

"NEWMARKET" will find a good article, signed "W. H.," on the points of Game fowls in volume xv., page 324.

I have been particularly fortunate this season in breeding, not having had a single case of last year's malady, although I have bred principally from the same stock and in the same yard. I have a few hatched in the second week in January, a few hatched in February, March, and April, all fine, healthy, well-grown birds, equal if not better than May or June chickens. A friend of mine, who lives a few miles from my place, has lost a large number this season, although he had not a single case last year. When the weather has been unfavourable I have placed them in a large horse box, lighted from the top, and 4 or 5 yards square. The floor I have covered to the depth of 3 or 4 inches with clean soil and sand; over this I have littered clean sweet straw, and when I serve with corn I scatter it amongst the straw, thus affording amusement for the old hens and the young broods, and I believe so conducing to their well-doing.—*YORKSHIRE.*

THE SELLER OF BOILED EGGS.

HAVING only just seen the *Journal* of April 16th, I wish to inform "Nemo" that my object in sending an account of the boiled eggs was simply that others might be led to examine any they might suspect to be in the same state, it being a new dodge to me to boil eggs for sitting. It could not be, as "Nemo" infers, with the object of getting the money returned, for on detecting the fraud I wrote by first post to that effect, demanding my money back, and giving the seller only one day to do so, or it would be put in other hands and proceedings taken against him. The seller thought, no doubt, it would spoil the egg trade for the future if he did not comply; I had, therefore, the money before anything appeared in the *Journal*, and though he may this time have escaped the legal, it is to be hoped the "moral kick" will act in a salutary manner.

I would, however, beg your readers to be on their guard if ordering an "honest sitting" of eggs, which the seller said I might have, more especially if from the neighbourhood of Halifax, without having the fowls sent to lay them a sitting at their own residence, which the said seller of boiled eggs offered to do if I would only send him the eggs back that he might judge for himself! Mark the craft. He wanted the proof of his fraud returned safe into his own hands, and for what? so that he might put "his man" in prison!—*J. L. L.*

CAUTION TO PURCHASERS.

In a recent number of your paper I advertised for Egyptian Geese, and on April 6th I received a reply from W. D. Woodward, giving address 198, Essex Road, Islington, London, N., offering me one or a "couple of pure-bred Egyptian Geese, just beginning to lay, at 9s. each. If you send P.O.O., be good enough to let it be made payable at the Islington district office."

I naturally thought this price very low, and made inquiries from my business correspondents, and found that no such person was known at 198, Essex Road, Islington, which is a post-office. I have since inquired at 198, Essex Road, Islington, and find that no such person lives in the neighbourhood.—*ALBERT O. WORTHINGTON, Newton Park, Burton-on-Trent.*

DUCKS PRODUCING EGGS FERTILE

WHERE THERE IS NO WATER FOR THEIR SWIMMING.

In spite of the general opinion that the eggs of Ducks which have not access to water are unfertilised, I tried a sitting from my own, kept in a stableyard with no water, except for drinking, and am glad to state that every egg has brought forth a duckling. So much for popular notions.—*W. D. A.*

EXCESS OF LAYING BY DUCKS.—The following instance I cannot but think is an extraordinary freak of nature, and worth

recording in the columns of "our Journal." During the night of Sunday, the 19th ult., my three Ducks laid four eggs of the usual size, one with a double yolk, and one soft egg, in all six eggs. On more than one occasion I have known them lay four eggs in one night. I also found that my three Ducks laid four eggs during the night of April 21st. I should state that they did not lay on the night of the 20th.—JOHN GOULD.

[Such excesses and irregularities always indicate that the birds' egg-system is over excited. The Ducks probably are excessively fat.—Eps.]

NEWCHURCH POULTRY SHOW.

THIS Meeting, held April 29th, was favoured with dry weather, and the attendance of visitors was extraordinarily good; but the hurricane that prevailed on that day was a very great disadvantage, for tents succumbed to its fury, and ladies had to cling to each other to avoid being blown down. To the general appearance of the poultry exhibited the wind, of course, was a very considerable drawback, and naturally those pens that happened to be placed in its direct course suffered most severely; but in many instances the exhibitors covered their pens of poultry to prevent evil consequences, and this proceeding, of course, diminished the attractions of the Exhibition. The now by-far-too-common mistake of waiting for some hours beyond the time specified for the birds to be penned, to take in the late arrivals, caused considerable difficulty, and is, beyond question, one of the features of many of our agricultural shows that loudly calls for improvement. An hour duly kept, and undeviatingly insisted on, is by far the preferable plan to ensure permanent confidence. Some of the birds in this instance did not arrive till many hours after the opening of the Show. The public sale on the Show ground of catalogues for some hours prior to the adjudications being even commenced, is another objectionable feature, and one that calls for alteration. The pens, and the attention shown the poultry, need but little remark, being really as good as could be fairly expected, and we can with confidence state the character of the poultry generally was of the best description in almost every class throughout the collection.

SINGLE COCKS.—*Gama*.—(Any colour).—First, W. H. Wheeler, Carlton near Nottingham (Black Red). Second, C. W. Brierley, Middleton, Highly Commended, W. Westwell, Baxenden, (Brown Red); J. Turner, Radcliffe; W. Morris, Accrington, (Black Red). Commended, J. Rowncs, Scout. *Bantam*.—First, J. Bamber, Accrington. Second, S. W. Smith, Carlton, near Nottingham. Commended, C. W. Brierley; W. A. Taylor, Manchester.

GAME (Any colour).—First, J. Bowness. Second and Highly Commended, C. W. Brierley. Highly Commended, J. Turner.

GAME BANTAM.—First, J. Robinson, Folesworth, near Manchester. Second, T. Birtwistle, Makengate. Highly Commended, G. Birtwistle, Makengate; G. Anderton, Accrington.

BANTAM (Any other variety except Game).—First, T. Burgess, Brighouse. Second, S. & R. Ashton, Mottram. Highly Commended, G. Anderton; W. A. Taylor.

DORRINGS (Any colour).—First, J. Stott, Healey, near Rochdale. Second, J. Robinson, Garstang.

COCHIN-CHINA (Any colour).—First, F. Haworth, Rawtenstall. Second, W. A. Taylor (Buff). Highly Commended, J. Robinson; T. Bott, Woodlands, near Bury. Commended, L. Duckworth, Sheep Hey, Ramsbottom (Buff).

SPANISH (Any variety).—First, H. Wilkinson, Early (Black). Second, W. A. Taylor (Black). Extra Prizes, J. Newton, Silsden, near Leeds. Highly Commended, J. Ashworth, Heightside, Newchurch (Black).

BRADIA POOTRA (Any colour).—First and Second, E. Leech, Rochdale. Commended, W. Hargreaves, Bacup (Dark).

HAMBURG (Golden-pencilled).—First, H. Pickles, jun., Early, near Skipton. Second, S. Smith, Northowram, Halifax.

HAMBURG (Silver-pencilled).—First, W. Wilson, Crawshawbooth. Second, T. Sharples, Crawshawbooth.

HAMBURG (Golden-spangled).—First, S. & R. Ashton. Second, H. Pickles, jun. Highly Commended, N. Marlow, Denton, near Manchester.

HAMBURG (Silver-spangled).—First, J. Fielding, Newchurch. Second, H. Pickles, jun. Highly Commended, J. Fielding.

ANY OTHER VARIETY.—First, Col. Stuart Wortley, Grove End Road, London (Crevin-Coeur). Second, H. Schofield, Newchurch (Black Hamburgs). Highly Commended, D. Lord, Stacksteads (Black Hamburgs); N. Marlow; H. Woodworth, Church, near Accrington.

TURKEYS.—First and Second, E. Leech.

GESE.—First, E. Leech. Second, Mrs. Tattersall, Scout, Newchurch.

DUCKS (Aylesbury).—First, Withheld. Second, R. Whittaker, Flaxmoss, near Haslingden.

DUCKS (Rouen).—First, E. Leech. Second, T. Bott. Commended, J. Greenwood, Burnley.

DUCKS (Any other variety).—First and Second, W. Brierley. Highly Commended, S. & R. Ashton (Carolina).

The Judge was Edward Hewitt, Esq., of Eden Cottage, Sparkbrook, near Birmingham.

CHILLED EGGS—PROTRACTED PERIOD OF HATCHING.

I HAVE this season had one or two rather remarkable instances of eggs hatching after having been left some hours cold, and beg to send you the particulars, in case you think

them worth a corner in your columns. Some breeders affirm that it is most important to have the eggs closely sat for the first few days. Others think that the critical time is a few days before hatching. Which theory is correct? or is there anything in either of them? On March 21st I sat a Game hen on fifteen Brown Red eggs. On March 30th she was accidentally shut off the eggs from eight until one o'clock, and on April 11th and 12th hatched out nine healthy chickens. On April 20th I set eight Brown Red eggs under a Game Bantam hen, and she was shut off the eggs from seven o'clock on the night of the 23rd until eight o'clock the following morning. I have to-day (May 2nd), broken one of the eggs, and found a live chicken about two-thirds formed. This is the most extraordinary instance of the kind I ever knew, especially as the night of the 23rd of April was frosty, and the nest in a tub out of doors.

On April 7th, forenoon, I sat a hen on fifteen eggs, and a few days afterwards found that she was infested with parasites. I fumigated the box in which she was sitting, and dusted the hen well with quicklime, which made a thoroughly effectual cure, but the eggs did not begin to hatch out until April 30th, and the last chick was hatched at noon on May 2nd. Is it not very unusual for eggs to hatch four days after time? and could it have been caused by the hen not sitting closely the first few days in consequence of the parasites?—BROWN RED.

ON THE REARING OF TURKEYS.

Your insertion of my notes on the rearing of spring chickens has led me to send a few more on the rearing of Turkeys.

Turkeys being rather delicate should never be bred from near relations. Procure the cock and hens from different places if possible. The first eggs laid by the hen Turkey should be placed under a common hen, and let the hen Turkey lay a second clutch. It is best to hatch all that are required not later than June.

The Turkey hen is a good sitter, and while kept in the coop a careful mother. She must never be let out early in the morning with her brood, otherwise she will drag them through the wet grass, and tire and exhaust them. Stinging nettles, too, should not be left in their way, as they sometimes get their legs stung.

The coop should be kept in a sheltered situation, with its back to the wind, and be moved every day. The ground on which coops are placed will soon become tainted.

For food I use curds mixed with meal, bread soaked in ale, bread crumbs, and a little canary and hemp seed, but the last must be used sparingly. I do not like the plan of keeping the food always before them, but think it best to give a certain quantity at a time, and fresh. A little well-cooked meat, torn into shreds, is very much relished, such as remains after beef tea has been made. They do not care much for wet food, such as meal, but require a change until they come into the yard and eat corn with the other poultry. I never give any green food to young Turkeys, but let them run on grass. I have had them in a garden while the hen is cooped, and they are very fond of cabbages. I do not approve of poultry under cover, unless for a day or two. If they will not do well out of doors, neither will they in-doors.

When the young are about two months old they must be carefully attended to, as this is a very trying time for them while they are "shooting the red," or getting the red head. When they are old enough to run with the other poultry they must be driven in at night, otherwise they will frequently roost out of doors and take cold.

The cocks may soon be distinguished from the hens by their strutting, spreading their tails, and lowering their wings. The hens spread theirs also, and lower their wings, but, from my own observation, only while challenging for battle, neither do they raise the feathers so high as the cock.—L. E.

A FEW REMARKS ON THE DIFFERENT VARIETIES OF PIGEONS.

I now proceed to give my opinion on some other varieties of the domestic Pigeon, with reference to their present condition as exemplified by those exhibited.

I shall pass by the Pouters, so much having been written on that particular breed of late in "our Journal" by such able

and well-qualified writers on the subject, and who have justly earned the thanks of the Pouter-fanciers in general.

Carriers seem evidently to be still in good hands, for many of the birds exhibited last year were as fine in quality as any that I had hitherto seen; excellent in colour—erect, yet graceful in their carriage, and with splendid wattle and eyes, leaving scarcely anything to be desired, with the exception of a little more variety of colour. The Blues and Whites, though good, being very few, would it not be well for some good fanciers to look after these colours, and breed them before they are entirely lost? It would be a real boon to this particular fancy.

Barbs, I also think, fairly maintain their position, with the exception of the Whites, of which colour I have seen much better specimens; and I think the Yellows are a little on the decline, no birds last year coming up to Mr. Eden's celebrated birds of a few years ago. English and Antwerp Dragons are still strong in numbers and good in quality.

In Jacobins there is a great falling-off. Where are such as the splendid birds of those excellent old fanciers, Messrs. Bowler, Wicking, Maddeford, Cottle, and some others, particularly the strain of the first-mentioned gentleman? They were the produce of many years of careful and thoughtful breeding; lengthy in feather, short-headed, down-beaked; of fine, rich, deep colours—Yellows, Reds, and Blacks—with frills, such frills, that looked at in profile they nearly hid the eye of the bird from view—not as now in very many cases, the feathers of the hack part of the head either cut or frilled out to make the hood lay even and well over. Even then they are deficient at the sides, very often not reaching to the eye, and standing away from it; besides which, whatever exhibitors may think of their birds so trimmed as they often appear in the pens, it does not make them better birds, nor are they any better than a sham and a cheat; and should they thus obtain a prize, they must remember that they have come by the same unlawfully. No true fancier will do this, but will by patient endeavour so breed his birds that they shall have in a greater degree those points naturally which he of less tender conscience tries to obtain by artificial means.

The perfect Jacobin ought to have its frill lying well and closely over the head, also close and flat to the cheeks, reaching at least partly over the eyes, and meeting in front of the breast just below the beak. This quality I observed in scarcely any of the birds exhibited last year, nor were they, with few exceptions, so good in colour as formerly. The heads were very variable in form, not a few being of the Tumbler shape instead of having, as I have before noted, the peculiar short, square, down-beaked formation of this elegant variety. Many of the birds also had orange eyes.

The breed has, as far as I have seen it of late, deteriorated; and this is much to be lamented, as it will take years, even in good hands, to reproduce its former excellence.

In my last article, "gold-lined beak" should have been "Goldfinch beak;" and "have not colour in the tail" should have been "have ash colour."—HARRY.

THE POUTER CONTROVERSY.

WILL not some fancier come forward and give us information with regard to the Pied Pouters? The Pouter being the favourite of the Scotch fanciers, and they having done more than any other breeders to bring that beautiful bird to its present state of excellence, they doubtless have felt themselves aggrieved at the tone of some of the letters which have been published, therefore have written rather warmly in reply.

Thanks to "HARRY" for his letter, and I hope he will proceed and do as he has offered at once; then possibly we shall get a controversy on every variety of Pigeons. If it is not asking too much of our ardent fanciers, would it not be interesting if some would take notes of the doings of half a dozen pairs of their birds, and publish those notes at the end of the breeding season, stating what they did in the shape of markings, colour, &c.? Cannot a fancier be found to come forward for every variety of birds? Could not a volume of knowledge be revealed worthy of a young beginner's study? Possibly some may think that it would be treading everybody as much as he knows himself. What if it did? Would it not show him to be anything but a selfish fancier? What an interesting paper could be formed by those that make the "any other variety" class their favourite pets! What could be said on Satinets, Fairies, Ice, Spots, Swallows, and many other varieties! Any one at the last Birmingham Show, and fond of sportive-coloured

birds, might have stood for any length of time and admired the recently-imported German Toys with their brilliant colours. Far are the Germans ahead of us in colour.

I will now say I differ from Mr. Volckman on the Carrier. Were not the prize and many of the other Blacks all that could be desired for colour at the late Birmingham Show? Most certainly so, in my opinion.

Mr. Volckman asks how many times the Black may be crossed with the Dun. I think that question cannot be answered, because I never knew of any Blacks that have not been crossed with Duns. Do you ask, Why have the Blacks been crossed with Duns? In my opinion the reason is this—you invariably find developed Duns coarser-headed, heavier-wattled, larger-eyed birds than Blacks: therefore they have been matched to Blacks, the consequence being far better points in the head, wattle, and eye, and bad colour, which may be remedied in one season's breeding. Whilst speaking on the Carrier, let me ask the fancy now that there is a separate class for Blues at some of the principal shows, to study their colour (which is bad), rather more than they have done.

I certainly coincide with Mr. Ure, that the Birmingham Show has made rapid progress within the last few years, there being better birds and larger entries in all classes. Of course in all shows we shall meet with some indifferent specimens, for the want of proper information respecting the merits of birds on the part of their owners; yet, taking the prize birds throughout the show, in my opinion there is a decided improvement in every class.—A YOUNG FANCIER.

ALMOND TUMBLERS.

I MUST say that I entirely disagree with "HARRY's" remarks on the Almond Tumbler. He seems to think that the true Almond Tumblers have deteriorated in many of their qualities of late years. Now, I have kept them for some years past, have been among them as much as any man for the last nine or ten years, and I have seen the Birmingham, Crystal Palace, Glasgow, and most of the leading shows, and from what I have seen, I certainly must say (with all due deference to "HARRY"), that I am quite of a different opinion, and that to me there is a great improvement in them; for instead of birds with faces seven-eighths of an inch in length, as formerly laid down in the rules of an old society, we have plenty now little over five-eighths, and with other properties equally good.

As to colour and marking, if "HARRY" had been lately to some of the private London shows, where he talks about having seen them "years ago," he might still have seen them. The fact is, "HARRY," like many others, having once seen a few birds to their own liking, without taking the trouble to look about them, run away with the idea that there can be no others like those they once set their minds on; and should "HARRY" or any other gentleman wish to see some really good Almond Tumblers, they have only to pay a visit to the City Columbarian Society.—J. FORD, Hon. Sec.

UNJUST SLAUGHTER.

I was sorely tried and puzzled yesterday. It was a fine day, so I looked into No. 3 nucleus box to see how matters were coming on; and as I found only a small company of workers along with the queen, and she was laying eggs fast, I took out of my pure Italian stock the ripest brood comb I could find, and placed it with the adhering bees in the nucleus to strengthen it. All seemed right, but two hours, or not more than three afterwards, I went to look, and lo! the alighting board of the stock—a good-sized one—was covered with bees in a state of excitement, and they were slaying some bees on their attempting to enter, by dozens.

How is this? Have the bees from the brood comb returned to their parent hive, and has their temporary absence of two to three hours been looked upon as an act of high treason and resented as such? It seemed a hard case if capital punishment was to be inflicted for such an offence; but it seemed as though such was really the case, as there seemed no addition to the number of bees in the nucleus. So to make matters as well as I could I fed them in order to quicken them up a little. I cannot see that I did wrong in removing the brood comb with the bees on it; but if there is no amendment in the nucleus I must do something to strengthen them, or I may lose the

queen, and although she is a "doubtful" one, she breeds very well-marked Ligurians.—J. R. J.

[It is certainly strange that bees should be slaughtered on their return to their parent hive after so brief an absence. It may possibly be accounted for by the supposition that they carried with them the odour of another stock, and were therefore treated as strangers. We know that a similar hypothesis has been advanced in respect to queens destroyed by their worker sisters on their return from a wedding trip. You ran a great risk of losing the queen by introducing the adult bees which adhered to the brood comb, and we should advise you by no means to repeat the experiment. If the bees in the nucleus are too few to cover and hatch out an additional brood comb, we should exchange one of their own for another and a ripper one from a strong stock. In very extreme cases we have sometimes spent hours in picking off one by one, and dropping into a tumbler covered with the pitfall-like top of an invalid's expectorating cup, some hundreds of grey young bees from the combs of a strong stock in order to add them to a nucleus. Such bees will not attack a queen, and must perforce remain permanently attached to the colony to which they are transferred.]

HOW TO BREED PURE QUEENS—IMPORTANT DISCOVERY.

I wish to call the attention of English bee-keepers to a most important discovery made by M. Koehler, a Protestant minister in Hesse. It is no less than the secret of directing the breeding of the bee; so that, as with our cattle, we may select the choicest male to be the father of the future stock. The discovery would appear almost too wonderful to be true, but its value and reality are vouched for by some of the leading bee-keepers in Germany.

Mr. Koehler will communicate his discovery upon a promise, on honour, of strict secrecy for the present, and a fee.—HENRY DE ROMESTIN, *English Chaplain at Baden.*

[Mr. Koehler's process having been communicated to me, I can state that it is simple and perfectly feasible. It has, moreover, been tried by some of the leading apiarians in Germany, who have publicly testified to its success. I have not yet had time to test the discovery myself, but as it is in strict accordance with the instincts and habits of the insects, I have no doubt whatever of its effecting the desired end.

At the request of Mr. de Romestin I have consented to receive the names and addresses of those who may be desirous of becoming acquainted with Mr. Koehler's process. All applications must be accompanied by a promise of secrecy and a post-office order for 10s. 6d. fee and postage, in return for which printed instructions will be forwarded. Any one requiring an immediate acknowledgement of their remittance should also enclose a stamped and directed envelope.—T. W. WOODBURY, ("A DEVONSHIRE BEE-KEEPER"), *Mount Radford, Exeter.*

PROCURING ARTIFICIAL SWARMS.

I SHALL be glad to know if the following plans will answer—
1st. Put a frame, having a queen's cell from a Ligurian hive and its accompanying bees, into a hive, and put it in place of a black stock. Will the Ligurians inside and returning black bees quarrel? I presume drone comb will be built at first, which I would remove when the young Ligurian queen begins laying. I ought to mention I have no worker comb to give the bees at first.

2nd. Fit comb from an entire colony into frames, having a Ligurian queen's cell in the centre one, all rival cells being cut out, and put this hive in place of another black colony. Will the returning bees raise the Ligurian royal embryo?—C. A. J.

[Either of the above plans are likely to answer, but it would be well that the comb should contain pure Ligurian brood in all stages, as well as a royal cell or cells in case of the latter happening to be torn out by the returning bees during their first excitement or discovering the change that has taken place.]

FRAME HIVES.

I SEND you a frame such as I use, and think it simpler than those I generally see drawings of in "our Journal." I have others made with a bead in the centre of the frames, and find

it a great guide for straight comb-making. It simply consists of a small strip fastened on with three tin tacks.

The method of fixing the combs in frames could, I think, be more easily done with indiarubber bands. I used them last year, and found them very handy, especially if you are transferring bees from a straw hive to a Woodbury, saving time, too, as you get them into their new home at one operation.—J. J. S.

[Your frame is similar to those ordinarily used, differing somewhat in its mode of construction by being dovetailed instead of morticed at the top, whilst the bottom rail rests in a notch at each end, and is further secured by copper wire. These frames are stronger and more simple than the "compound" ones used by Mr. Woodbury, which, however, possess, as he believes, some special advantages. The idea of using indiarubber bands for the temporary support of combs is new to us, and appears a good one.]

SILKWORM-REARING IN ENGLAND.—No. 9.

WHAT preparation do silkworms' eggs require before hatching? It is customary with a wooden knife or metal spoon to scrape them from the linen on which they were laid, after soaking it in pure soft water about twenty minutes, to soften the gum, causing them to separate easily. This operation is best performed in autumn, or not later than the beginning of March, before the worms begin to develop in the eggs. The eggs are afterwards washed in water, moving them about gently with the hands, and separating those which stick together. After a few minutes the best and heaviest will remain at the bottom; and the inferior and light, floating on the water, can be poured away. Then the good eggs should be collected on a cloth, horsehair sieve, or fine canvas, hung up to drain from the water, and afterwards spread out on cloth or blotting paper to dry, being now and then turned with a spoon, separating them gently with the hands as the drying proceeds. Some authors recommend soaking the eggs in wine, brandy, or certain chemicals as preservatives from disease. I consider the proceeding very unnatural; but using water is but following Nature's course, for the eggs on the mulberry trees in the silkworms' native country are exposed to rain.

The reasons for detaching the eggs from the linen are to separate the good from the bad—to clean, weigh, and arrange in the hatching box in less space, and thus to facilitate collecting the worms. The Japanese breeds sent over to France and Italy are on cardboard, and are left to hatch on it, because to scrape them off when wetted is almost impossible without bits of paper coming away with them. Eggs produced at home would be preferable, but at the present day it is considered necessary to procure them every year or two from the native country of these breeds, or at least from certain districts free from disease.

Eggs of good quality are of a grey ash colour rather inclining to violet, spherical, somewhat depressed in their centre, and elastic under the pressure of a person's nails. A transparent fluid issues out on their being broken, and if thrown on the fire they will crack.

It would add to success in rearing silkworms in England if the hatching of the eggs were retarded by keeping them as cool as possible after January, without freezing, in earthen pots, pans, or jars in a dry cellar. If the mulberry trees are well in leaf as early as the middle of May, the eggs may be set to hatch, and this is early enough; indeed the end of the month is better, but sometimes it would be impossible to prevent natural hatching before this time, unless by means of an ice house.

If eggs have not been preserved properly, they will often hatch by the end of April before there are leaves for them, and oblige the rearer either to throw them away, or try a portion only on lettuce until the mulberry leaves are more forward.

When the eggs are about to hatch they assume a whitish cast. A few worms may very probably be seen out. When this is the case, no alternative remains but to bring the eggs from the cellar to an upper room, and deposit them in the hatching box. Whatever the natural temperature may be in the room towards the time the sun goes down, that is to be maintained all night in the little hatching room, to which the eggs are removed. Suppose such temperature to be only 55°, next day let it be raised gradually, until at night it is 65°, and by the following morning 70° may be reached and maintained continually. Should the temperature on the first day be more

—60° for example, then it should be raised more slowly in proportion. By the time 70° is reached doubtless the worms will be fully coming out of the eggs; and it will be as well to temper the dryness by sprinkling a little water in the room, which will have a good effect on the worms, facilitating their exit from the shells. Some persons hang wetted towels below the eggs, which answers the same purpose.

Presuming the eggs to have been preserved well, and therefore not so near hatching, it is desirable to extend the raising of the temperature over the space of five or six days before arriving at 70°. Bring the eggs from the cellar into a place but little warmer the first day; give more heat the next, raising the temperature in proportion to what it naturally is only rom 2° to 5° daily.

The eggs may probably not hatch before eight or ten days, but the worms will then be finer and stronger. They generally come out of the eggs in the morning soon after sunrise. Observe when hatching to keep a screen before the fireplace or stove, to prevent the artificial heat playing directly on the eggs, which would injure them. A thermometer should always be near them, and it is as well to have another outside the window of the room, that it may be known when the temperature there is such that more air may be admitted. The earlier or later hatching of the eggs is always in relation to the more or less elevated temperature at which they have been preserved from the end of January. Hardly any degree of artificial heat would hatch them before this month. The formation of the worms in the eggs may be known by the change from the ash colour to a darkish white, after which they soon come forth.

Probably the first day only a very few hatch and are not worth collecting, as also may be the case on the last day; therefore it is a good plan to set hatching an eighth more in weight of eggs to provide for loss of this kind, as also for bad ones, besides the death of some worms during the rearing.

I intend showing the management requisite with worms from one ounce of eggs, which quantity will suffice to fill two of my castles as described, supposing all to arrive at perfection, which is not likely; but an eighth more in weight of eggs provides for all contingencies, and even presuming every egg to come to maturity there would still be room. For this small quantity of eggs, stove, fireplace, or lamp heat would be used, with my gutter paper instead of a box. The morning when the worms are seen hatching, lay over the gutters the tender leaves; the worms soon crawl on them, and when the leaves are tolerably well covered with worms, but not crowded with them, gently lift them on to a sheet of paper, and place them on the third stage of a castle, which is a convenient height, allowing of a standing position while attending to them. The removal of the worms to this sheet of paper may generally be executed in two operations—viz., one at 10 A.M., and the other at 1 P.M., after which no more eggs are likely to hatch until the following morning. Each day's lot is to be kept on separate sheets of paper, and four sheets will probably hold all, presuming they are hatched in four days.—LEONARD HARMAN, JUN.

OUR LETTER BOX.

FEEDING POULTRY (G. R. S.).—You can only arrive at a proper estimate of the food necessary for ten fowls by feeding them yourself, and taking the average of seven or eight days. The only point of difficulty you will have will be to make allowance for the condition in which they are when the experiment is begun. Fowls that are badly kept eat more at first, but as soon as they are in condition, they eat regularly. Rice is not good food. Where you have conveniences, it is best to buy your food wholesale, and having due regard to weight, the cheapest is the best.

FOWLS CHILLED (J. P. S.).—Your fowls are suffering from a chill. Discontinue the Indian corn and rice, give ship bread well moistened with ale, put camphor in their water, and supply them daily with large sods of growing grass, with plenty of fresh earth on these. Tell us next week of what material the floor of your house is composed.

MARKINGS OF HOUDAN CHICKENS (Ring Dutterell).—The Houdan chickens are black or nearly so when hatched. In selecting, we should choose those lightly spangled, as they all become more spotted as they grow older. In all breeds it is well to defer weeding as long as may be conveniently and profitably done.

REARING WOODCOCKS AND SNIPES (Idem).—We have reared both Woodcocks and Snipes, and have kept winged birds of the former. In every instance we found it necessary to cram the birds for some days. This was the great difficulty with young ones, as their long bills are so tender, and are easily injured. We fed them entirely on worms, introducing these at the corner of the mouth, and pushing them down the throat with a feather. After a couple of days, although they will not pick up the worm, they will swallow it of their own accord as soon as it is put in the mouth. At last if live worms be put in a very shallow vessel, and covered with mud one-eighth of an inch, they will pick them out and eat

them. The Woodcock is easier than the Snipe to manage. We have Ruffs, and Reeves and Godwits now, and have had them out of doors throughout the winter. We imagine a Ruff could only be shown at a Crystal Palace bird show.

CAROLINA DUCKS (Carolina).—Carolina Ducks are birds of feather, not of size. There is but one point—i.e., beauty and condition of plumage.

BANTAMS PECKING EACH OTHER (E. W. H.).—The propensity you name is an unnatural one. Failing any other solution, we always imagine such arises from a vitiated state of body. The first advice we can give is to separate the Bantams from the Dorkings, next to give less stimulating food than they have hitherto had, and lastly to let them have a good grass run. In the young grass there is plenty of natural poultry medicine, and they will find it. In a recent number we gave ample instructions for marking chickens.

PROMOTING GROWTH IN CHICKENS (Erob).—Hamburghs feather much earlier than Cochins. While the latter are covered with down, the former show spangling or lacing. Discontinue the rice, it is no better for chickens than sawdust would be for children. Barley is only good as occasional food. Give oatmeal or ground oats slaked with milk, and bread and milk. Continue the cooked meat, and give occasionally some bread and ale. May chickens are fit for winter shows.

PROTRACTED HATCHING TIME (W. Prideaux).—Two things suggest themselves to us. It may be that the hen which did not hatch until the twenty-fourth day did not sit closely the first few days, or at any rate the first day, not closely enough to cause any change to take place; or it may be the eggs were kept too dry, and it was only after long effort the chickens could free themselves from the egg. It is common out of a sitting of thirteen to have eight out at night, and the others not till the following morning. It is never safe to condemn a sitting because the twenty-one days have elapsed. Very lately we were asked to look at some eggs that had been bought, put under a good hen, and were all added. The purchaser was angry. We thought the egg neither felt nor sounded like an added one, and we dropped it on the ground, it contained a chicken that would have been hatched in a few hours. Nearly all the eggs were the same. It is always unsafe to condemn eggs till after two days' grace. We have heard of prolific peas, wheat, and barley. We advise Mr. S. to advertise his prolific poultry. We never before heard of three eggs per day.

DEFORMED CHICKENS (G. P.).—We cannot account for the deformity of the Houdans. From the number (seven) that are hatched all with wry necks, we should be disposed to alter the breeding stock.

SPANISH HEN'S DISEASE (Cobbett).—The Spanish hen was opened and carefully examined. Her liver was extensively diseased and enlarged, when divided large quantities of blood escaped from it. There was great inflammation on the bowels, which appeared to have come on suddenly, as the bird must have been in health shortly before death. As these appearances are often suspicious, we examined the contents of the crop, it contained small seeds like tares, quite white inside when divided. Could they be poisonous?

PRESERVING EGGS (Thomas).—You can preserve your eggs in lime. Fill a large pan with eggs till the bottom of it is covered, then have lime slaked with water till it forms a sort of smooth concrete, pour in till the eggs are covered; after the lime is firm put in another layer of eggs, cover a third with lime, and so on till the vessel is full.

ESTABLISHING A POULTRY SHOW (Medicus Rusticus).—You had better write to two or three of the secretaries of the poultry shows of which a list appears in this Journal. Ask for a prize list and rules, and enclose two postage stamps. You will find them nearly similar.

CENTRIFUGAL HONEY-EXTRACTING MACHINE (C. A. J.).—"I hope soon to redeem my promise. Absence from home and other matters which would not brook delay, have hitherto combined to hinder its fulfilment.—A DEVONSHIRE BEE-KEEPER."

EARLY DROPPES (J. L. S., East Cornwall).—The appearance of a couple of droppes (April 25th), in a strong stock at this season, does not denote a drone-breeding queen. They may merely be accidental, as stated in page 251 in reply to "T. W.," and in this case the Liguirians may yet be first in drone-production proper; or the black bees may take the lead in drone-breeding without being the stronger colony, either by reason of the queen being an old one, and therefore prone to lay drone eggs, or merely from the accidental presence of drone cells in the "brood nest."

PARROT SELF-PLUCKED (E. W.).—The plucking is induced by irritation of the skin. Do not feed on animal matters or heaped fruits and soppy bread should be the bird's diet, and let it have a tepid bath daily. Put a soap plate filled with the tepid water for the bird to make use of. If it does not bathe voluntarily, pour the water over it through the rose of a garden watering pot.

GOLD FISH (S. Shepherd).—It is quite impossible for us to tell what is the cause of your gold fish dying, not knowing the symptoms. It is possible that zinc tank may have a prejudicial influence.

CATTLE INSURANCE (H. F. F.).—There is no company in London now in which you could insure the life of your cows.

POULTRY MARKET.—MAY 6th.

WE have still a wretched supply of poultry, and if the trade were not worse than the supply, prices would be higher than they have been for many years.

	s	d.	s	d.		s	d.	s	d.
Large Fowls.....	6	0	4	6	Pheasants	0	0	0	0
Smaller do.....	4	0	4	6	Partridges	0	0	0	0
Chickens	3	0	3	6	Guinea Fowls	0	0	0	0
Goslings	7	0	7	6	Hares	0	0	0	0
Ducklings	4	0	4	6	Rabbits	1	5	1	6
Pigeons	0	9	0	10	Wild do.....	0	9	0	10

WEEKLY CALENDAR.

Day of Month	Day of Week	MAY 14—20, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year
			Day.	Night.	Mean.		m.	h.		m.	h.				
14	Th	Meeting of Royal and Zoological Societies	63.2	40.4	51.8	16	12	44	42	47	4	41	4	3 53	135
15	F	Meeting of Royal Institution.	64.8	40.6	52.7	15	11	4	43	7	33	1	after.	3 52	136
16	S	Royal Horticultural Society, Promenade.	66.2	42.5	54.3	15	10	4	45	7	58	1	56	0	187
17	SUN	4 SUNDAY AFTER EASTER. [Society.]	65.7	41.3	53.5	16	8	4	46	7	21	2	3	2	138
18	M	Anniversary Meeting of Royal Asiatic	66.0	42.2	54.1	17	7	4	47	7	45	2	10	3	139
19	Tu	Royal Horticultural Society, Fruit, Floral,	66.5	42.7	54.6	13	5	4	49	7	9	3	20	4	140
20	W	Meet. of So. of Arts. [and General Meeting.]	67.0	43.4	55.2	19	3	4	50	7	35	3	33	5	141

From observations taken near London during the last forty-one years, the average day temperature of the week is 65.6°; and its night temperature 41.9°. The greatest heat was 89°, on the 22nd, 1847; and the lowest cold 25°, on the 15th, 1850. The greatest fall of rain was 0.58 inch.

INSECTS.



SOME persons attribute insect-attacks to defects in cultivation, and are clamorous in their inquiries as to the cause of plants being so infested with insects. That there is a cause for every effect cannot be disputed; but that there is any other reason for insects infesting a plant beyond that of their having in the plant attacked some substance which is necessary for their existence is very questionable. I willingly admit that

certain conditions are favourable to the spread of insect life, and that plants subjected to those conditions favourable to the development of insect life will be the most liable to attack. I must, however, differ entirely from those holding insect attacks to be indisputable evidence of the plant being in some stage of disease. Disease in a plant is in every sense distinct from a plant being infested by insects, and a plant will perish of the disease by which it is assailed without the occurrence of insects. I know that a vigorous and flourishing plant attacked by insects, if measures be not promptly taken to check their ravages, will be weakened, and lose the beauty of its foliage and flowers, and in the case of fruits these will be deteriorated both in quality and size. I am equally aware of the fact that a plant weakened by an attack of insects recovers its wonted freshness and vigour when freed of the parasites that suck out its juices. So far, then, am I from being persuaded that insects attack a plant because it is unhealthy or diseased that I give them credit for greater instinct, believing them to attack a healthy and vigorous plant oftener than one which is diseased and not so well calculated to meet their wants.

It is not my intention in this and subsequent papers to treat of the diseases, but of those insects infesting plants, which, if they do not kill, yet greatly impair their beauty of foliage, bloom, or fruit.

APHIDES.—Of these there are many species. Almost every plant subject to the attacks of aphides has its peculiar kind or species, and they are of insects the most common and speedy of increase.

Green Aphis or Green Fly.—The plainest characteristic of this pest is its colour. It is not very particular as to what it assails. The Pelargonium, especially the Show varieties, the Cineraria, and the Calceolaria, are its great favourites in-doors, whilst the Rose, both in and out of doors, is sure to be visited by it. The Peach, too, suffers much from aphides, but the species is not the same as those which attack the Cineraria, the under sides of Rose leaves, and the growing points of the Pelargonium. The Plum, too, has a green fly peculiar to it; and the Gooseberry, Currant, Beech, Lime, and Sycamore have their own species of aphides, all of which are great producers of honeydew—those infesting the Red and Black Currant, the Lime, Beech, and Sycamore being the most prolific. Honeydew, I may state, is not caused by the influence of the air, and where there are no aphides above there is no deposit of the sweet secretion known as honeydew, of which the humble or bumble bees and wasps take their fill, and

make a noise in large plantations on a fine day not unlike that of a swarm of bees high in the air. The honey bee does not, so far as I have observed, gather honeydew; but the wasp will not only suck the honey, but devour the producer of the honey.

All the species of green aphids are destroyed by tobacco smoke, by a decoction of tobacco in water, and by powdered tobacco.

For plants under glass the simplest and at the same time the most effectual method of destroying the green aphid is fumigation with tobacco. It not only destroys the insect, but acts for a time at least as a preventive. The fumigation should take place on a calm evening, and if the outer air be light and damp all the better. The house should be shut up closely, and where practicable a covering of canvas or mats to confine the smoke would render the fumigation more effectual. The foliage of the plants should be dry, but to prevent any injury to them from the dryness of the atmosphere the floors and every surface, so far as it can be done without wetting the leaves, may be syringed. Nothing is equal to the leaf tobacco for fumigation, Cavendish being the best that I have used. Thin paper saturated with the juice of tobacco undiluted with water is also useful, and that in which pigtail is wrapped prior to pressing, and when it comes off, is excellent, and when thoroughly saturated quite equal to tobacco leaf. English-grown Tobacco is also good, but not equal to the preceding. The thick paper steeped in tobacco juice much diluted with water is too uncertain in its effects on the green fly, and it will not burn well, nor will it keep without turning mouldy. It is a sure sign of bad quality in tobacco paper or tobacco when either turns mouldy. Then little or none of the active principle of the tobacco is left, and the material burns rapidly, instead of smouldering without much blowing as in the case of thin paper steeped in undiluted tobacco juice. The paper should be torn into pieces about the size of a crownpiece, and if tobacco leaf be used it should be thoroughly chopped or cut.

The best mode of making an apparatus for fumigation is to form a piece of sheet iron into the shape of a flower pot, and to add to it a copper bottom pierced with quarter-of-an-inch holes. This should be put in about 1 inch from the base, and be secured with rivets, as should the joints of the sheet iron. The apparatus may be 9 inches in depth, 7 inches in width at top, and 5 inches at bottom. Under the grating, or bottom, holes should be cut in the sides to admit the air beneath the bottom or grating, and in one side immediately above the bottom should be a hole with a tube of sheet iron, about 3 inches long, rivetted to the side, the tube and hole being large enough to admit the nozzle of a pair of bellows.

Previous to being used the apparatus should be set on the floor, and as near the front of the house as possible; if there is no floor in front, then set it on a tile or slate. Place a few pieces of red-hot charcoal on the grating, and then a small quantity of the tobacco paper or leaf; apply the bellows, and when well lighted, add more paper or leaf, continuing to add more and to blow gently until the

whole is well alight, and the house so full of smoke as to be unpleasant. Next add more paper, and quit the house when enough has been put on to fill it so full of smoke that a plant cannot be seen from the outside. The paper or leaf should be damp or limp, but not so wet as to require constant blowing, for if wet the operator must remain in the house most of the time. It is enough if the green fly be killed, and that it will be if the paper or leaf be good, and the house filled with smoke.

There are several fumigators. I have tried many, but I do not care for any beyond that described, which any smith can make; indeed, were not flower pots so liable to crack, I would as readily use one with a hole in the side as the best of the fumigators. If flower pots are used hard ones should be chosen, and put pieces of lath or slate beneath them, so as to let air in by the hole in the bottom.

The day after fumigation the house should be kept as close as practicable, not giving more air than can be avoided, and a moist atmosphere should be maintained by sprinkling the floor and other surfaces with water, but do not syringe until the evening; then give a thorough syringing, and again on the following morning, and admit air.

Various methods have been proposed for fumigating houses without having to stand the annoyance of the smoke. They have with me signally failed. I have, however, the pleasure to state that I had a canister of "Tobacco grains," a preparation made of duty-free tobacco, which I think is likely to supersede the troublesome and annoying mode of fumigation hitherto practised. The "grains" have the appearance of mahogany sawdust; all that is required is to spread them rather thinly on a plate or tray of sheet iron pierced with a number of small holes. The house is then shut up, as for fumigation with tobacco or tobacco paper, and the tray being placed in front of the house the "grains" should be lighted in several places, a piece of paper being sufficient. They burn like a fuse, produce smoke, and the house being filled with this the green fly is destroyed without injury to the foliage, although I expected before trying the materials that the contrary would be the case. After lighting the "grains" the operator may quit the house, and before he has so much as sneezed. I understand the price is to be one-fourth that of tobacco. It cannot fail to be a boon to amateurs and gardeners.

Fumigation with tobacco is the best of all remedies for the attacks of green fly. It may be employed for plants in as well as out of flower, and it does not dirty their foliage, nor injure it when used in solution, and powders are apt to do so. It is a cure as well as a preventive, and should be resorted to whenever a plant is in the least infested. The best natural preventives of green fly are giving an abundance of air, keeping the house cool, the plants as near the glass as possible, and giving frequent and thorough syringings.

As fumigation cannot well be practised on plants and trees in the open air I must defer reference to them until another time, and conclude this first communication with a statement of my firm conviction that no other mode of freeing plants under glass of green aphid is equal to tobacco smoke. There are other modes, but I cannot do more than state what I have proved to be the best, and that I shall strictly adhere to in subsequent notes.—G. ABBEY.

(To be continued.)

THE LOQUAT.

It is to be regretted that Mr. Bateman in his lecture on May 5th, as reported in your columns, did not go more fully into the culture of this fruit. The best description of it is to be found in Loudon's "Encyclopædia of Gardening," where also may be read an account of how the trees were managed at Lord Bago's. It was, I think, hoped and expected that Mr. Bateman would have thrown some new light on its culture. There is no doubt about the excellence of the fruit when grown in a climate suited to it. A friend who lived in St. Helena some years reports it as being peculiarly excellent there. As grown in the south of France it is said to be good, but I have only eaten it when preserved in syrup, in which state it has not the least flavour, but is merely a lump of sugar with two or three stones enclosed.

Some years ago I was much interested in this tree, which is one of the noblest of evergreens, and I found that the trees raised from seed, which may be done with great facility, would take a lifetime before they would bear fruit in this country, and under the artificial treatment here practised. The best

mode I soon found was to graft scions, from old trees if possible, on strong stocks of the Whitethorn (*Cratægus oxyacantha*), growing in the open air, and then to put them into large pots by the end of October. The stock should be stout, and if as stout as a small broomstick all the better. The grafting and the confinement of the roots to the pot soon make the tree ready to bear fruit.

The best method of grafting is that called rind-grafting, which is done by paring the graft very thin, and then inserting it between the bark and the wood; this is best done in April, towards the end, when the bark rises freely. As the leaves of the Loquat are large, they should be removed, with the exception of those at the crown of the shoot. The grafts should then be firmly bound as usual and clayed, binding some moss over the clay; or a better practice would be moulding the stock and graft up to its tip with cocoa-nut fibre. If the weather be hot and sunny the grafts should be shaded for a week or so, by placing a flower pot over them, tilted up on its northern side. Loquats may be grafted even now if stout stocks could be found. Some of the ends of the shoots from the tall naked-branched tree now in the conservatory at South Kensington would make excellent grafts. By the end of October the grafted trees may be taken up and potted, or planted out in a house prepared for them. If they have made vigorous growth they will soon make bearing trees if properly treated, and the treatment required seems at present not very clear.

The account given in Loudon's "Encyclopædia" of Lord Bago's mode of treatment is very interesting, but in my opinion the Loquat should not be considered a stove plant; for, as it grows and bears freely on the shores of the Mediterranean with a mild winter and hot summer, I see no reason why it should not ripen its fruit here in a climate under glass approximating to that of the above localities. It therefore seems to me that grafted trees should either be grown in 18-inch pots with a rich compost, or planted in the borders of a well-ventilated orchard house, fitted with hot-water pipes to give the temperature in winter necessary to their well-doing.

The routine culture should be as follows:—From the 1st of June till the last week in October the house should be open night and day, the trees being watered and syringed as required. From the 1st of November and all through the winter the minimum temperature should be 50°, thus imitating the climate of, say, Hyères in the blossoming season. During March, April, and May the same gentle artificial heat should be continued. This, with the occasional high temperature which sunshine will give, will ripen the fruit, and free ventilation without artificial heat during the summer and autumn months, during which the temperature of an orchard house ranges from 70° to 95°, till the 1st of November, will give health and strength to the trees, so that they will blossom in December, and set their fruit freely.

The Loquat is such a magnificent evergreen, independent of its pleasant fruit, that it is almost worthy of a house being devoted to its culture; but this need not be, for if some of our best kinds of dessert Oranges are planted with it they will succeed, and ripen their fruit in great perfection. As a preserve in syrup the Loquat is merely a vehicle for sugar, and has no peculiar flavour; if bottled and preserved without sugar it would retain its agreeable acidity, and be an excellent fruit for tarts.

In selecting trees for cultivation, care should be taken not to plant trees raised from seed, but those grafted either on the Pear or Whitethorn. If possible a good free-bearing variety should be selected, as they, like all our cultivated fruits, are apt to differ, as far as I recollect and have heard, not only in the size of their fruit, but in their bearing qualities.—MESFILUS.

ANTHURIUM SCHERZERIANUM.

THIS plant may be reckoned among the finest of modern accessions to our stoves. It is a distinct and beautiful dwarf-growing species, which even in a small state produces in great abundance its large scarlet flower spathes, which last in good condition for three months. It appears to be a plant very easy to cultivate, growing and flowering freely in a shady part of an ordinary Pine stove. Indeed so useful and effective a plant does it appear to be, that it is worthy of being grown by the dozen where there is much demand for decorative stove plants.

It grows freely in a mixture of sphagnum, peat, sand, and broken potsberds; and although it makes nice flowering plants in 6-inch pots, it seems to like rather a liberal amount of pot

room, and an abundant supply of water. Treated thus, it continues to make fresh leaves and flowers for a long time without any rest. It is a plant which can scarcely be too strongly recommended.—D. THOMSON (in *Gardener*).

BEDDING PLANTS

THAT MAY BE PLANTED OUT EARLY, AND OTHERS TO BE PLANTED LATE.

(Concluded from page 337.)

HAVING described the class of plants that may with advantage be planted out early in the bedding season, let us now turn to those which experience has proved ought not to be trusted out of doors too early, as nothing is gained by doing so; but, on the contrary, the cold air and chilly winds so check or damage them that they are generally later in arriving at perfection than those planted out later. In general, but not always, the hardness of the plant or otherwise determines this, for some plants not unusually met with under plant-stove treatment, suffer no more than others from temperate regions. A *Perilla* or *Tropæolum* is quite as susceptible to cold as a *Coleus*, when that cold sinks to 32°, although the latter makes less progress than they do while the night temperature is about 40°, and there are, besides, some other qualifying circumstances. The class of plants which it is advisable not to plant out before the third week in May, is a large one, and embraces many of the most prominent ornaments of the parterre. A few only will be noticed here.

SALVIA, especially *Salvia splendens*, are very tender, and ought not to be planted out too early, but *S. fulgens* may be planted out sooner than the others.

COLEUSES ought not to be planted out till the 1st of June in most places, and will succeed if they have been kept in a growing condition up to that time. They may be regarded as among the very latest that should be planted out.

PELARGONIUMS, if in separate pots, or tied up in moss so as to remove easily and well at any time, ought not to be turned out until the middle or towards the 20th of May, or even later if the season be an adverse one; but when they have been some time crowded in cutting pots or boxes, and are evidently injuring each other, they may be planted out earlier, provided shelter can be given to them in the beds—say a few laurel houghs or some such shelter from high winds and cold nights. It must be remembered that it is not advisable to plant out anything until the ground is in a fit state, nor is it recommended to plant out bedding *Pelargoniums* direct from the cutting box or pan if any means can be adopted for giving each of them a separate pot or ball of earth; but this cannot always be done, and when it is not, the flowering of course will be somewhat later. Where there is accommodation only for a few plants potted off singly, the general plan is to favour the most choice varieties, such as the Golden and Tricolor kinds, but this every one will judge for himself.

AGERATUMS.—These plants are very susceptible of frost, and they seem to like dry hot weather; but they are amongst the first in autumn to show the effects of frost, and ought not to be turned out too soon.

PERILLA NANKINENSIS.—Although capable of growing well in a dull cold season, yet a little frost destroys the young plants, as was proved here in the frosts of May last year; for though Scarlet and other *Pelargoniums* in the same position were not much injured, the *Perilla* was completely killed. If the plant can be protected from frost the cold air will do it no harm, as I have had it in a cold pit, only covered up with some boarded shutters at night, all through April without its sustaining any injury. Frost, however, is fatal to it.

AMARANTHUS MELANCHOLICUS RUBER.—This will not endure any great amount of cold or damp, and is much more tender than *Perilla*. A bright sunny period suits it best, and when the plants occupy a position between the spectator and the sun they appear to the greatest advantage.

IRENE HERBERTII.—The only recommendation this plant has, as a friend sarcastically said of it a few days ago is, "that it is tender." The only times at which it really looks well are in the spring months when it is in course of propagation, and late in the autumn if it has had the fortune to do tolerably well. As a summer plant it is only second-rate, if even so good as that. It will not do well planted early.

DAHLIAS.—These are more tender than bedding *Pelargoniums*, and although they do not suffer when planted early if they are good well-established plants, and some protection is afforded

them in case frost should occur, yet they seldom make any progress until warm weather sets in.

Of plants with remarkable foliage, the Castor-oil plants and *Solanums* ought not to be turned out till the end of May, and the same may be said of Tobacco, choosing dry weather for transplanting the latter plant, as slugs are very fond of it. *Wigandia* and *Ferdinanda* are also better kept in-doors until fine weather sets in, and the same may be said of most similar plants whose growth is rapid when it does start. It would not be prudent to let the plants get damaged and chilled by cold previous to the proper growing period, and the first crop of hay may be cut ere many of the stove plants which it has been the fashion of late years to plant out be turned out of doors, for established summer weather alone is suitable for them, and the best results of such displays are invariably obtained in those cases in which there has not been too great hurry in planting out. The same remark also holds good in many respects as to ordinary bedding plants, excepting, of course, those mentioned last week.—J. ROBSON.

HORTICULTURAL EXHIBITIONS TO BE HELD DURING THE PRESENT YEAR.

THE following provincial Floral and Horticultural Societies have announced their intention to hold exhibitions and meetings on the dates specified below during the months of May, June, July, August, and September. Those marked with an asterisk (*) are in union with the Royal Horticultural Society.

	May.	June.	July.	Aug.	Sept.
Alnwick	3
*Alton (Stafford)	9	..	3
Bath Royal United	13, 14	..	..	..	9
Bicester Ag. and Hort. Association	8
*Boston	2	..	..
Bristol and Clifton	21	25	..	..	..
*Buckingham	28	..	..
Burntisland	11	..	12
Burton (Chester)	29	..
Cambridge	20	25	22	..	16
Castle Douglas	3
Clay Cross	11	..
Colchester and East Essex	20	..	8	..	9
County of Gloucester and Cheltenham Royal Horticultural	10	..	..	2
Crich	5	..
Denny and Dunipace	6	11	..	12
Dundee	3, 4, 5
Durham, Northumberland, and Newcastle-on-Tyne Bot. & Hort.	5	..
East Cumberland	26	..
Ellon	12	..
Falkirk	28	..
Glasgow and West of Scotland	3	8	..	9
Halifax	2	..	..	..
Haltwhistle	16, 17	..
*Harrogate	3
Hexham	2, 3
Ipswich	18	..	7	..	10
Leeds	10, 11, 12	..	..	..
Leslie Cottage Gardening	18	..	..
*Lincoln	27	..	..	..	9
*Loughborough	29	..	..
Lowestoft	9	27	..
*Manchester Botanical and Hort.	29 to	5	..	..	..
*Merthyr Tydfil	30	..	..
Newburgh District Gardening	19	..	..	10
Penninghame and Munnigaff Cottage Gardening	21	..
Reading	4	..	27	..
Rochester, Chatham, and Strood	16	..	..	..
Royal Caledonian	10	..	..	2
Royal Horticultural of Aberdeen	28, 29	..	23
Royal Horticultural of Ireland	21	..	2	..	3
*Royal Jersey Agric. and Hort.	13	17	..	..	..
Royal Oxfordshire	16	30	..	16
*St. Ann's Amateur Floral and Horticultural (Nottingham)	6, 7	..	..
Saffron Walden	10	..	..	9
Sevenoaks	2
Shotley Bridge	29	..
*South Nottinghamshire Horticultural and Cottage Gardening	2	..	..
*Spalding Flower, Fruit, and Poultry	26	..	..	..
*Staffordshire	23	..	..
*Taunton Deane Hort. and Flor.	13	..	..
Todmorden	22	..
*Undercliff (Isle of Wight)	3	..	..	2
Weston	16, 17
Wiltshire and General Arboricultural and Hort. (Salisbury)	26, 27	..
Workington	15
*Workshop	3

In addition to the above, exhibitions and meetings will be held October 14th and November 18th by the Royal Jersey Agri-

cultural and Horticultural Society; on November 18th by the Cambridge Horticultural Society, and on November 26th by the Royal Horticultural Society of Ireland.

ROSES AND SPRING FLOWERS.

MR. WILLIAM PAUL'S NURSERIES, WALTHAM CROSS.

A VISIT to these nurseries at any season is sure to be found interesting, especially so in the spring months, when the noble array of early-flowering plants which Mr. Paul has for some years past successfully cultivated and exhibited is in its beauty. Spring gardening as it is called, or, more correctly, floriculture for spring, is beginning to receive the share of public attention it naturally claims; for it is in the early months that the hopes of the florist are most strongly excited, and the first flowers of the year always receive the heartiest welcome, if not the greatest share of admiration. True to the high character which Mr. W. Paul has maintained for so many years as a leader in horticulture, he is constantly drawing upon resources hitherto neglected or left in abeyance, developing new beauties for the decoration of the pleasure and flower garden, pressing into service subjects generally left to the nooks and corners of the humble cottage plot, and even found wild in the hedges and fields.

We should call nothing common, in a depreciatory sense, that is beautiful, even if abundant. There is beauty in the wayside plant trodden under foot. There is marvellous beauty in all those pretty flowers blooming in the hedges and fields in the early spring, could we but appreciate them aright. Our leading horticulturists, then, are wisely moving in a proper direction in showing us how these things may add still further to our gratification and enjoyment by introducing them with judgment into the flower garden, and blending their delicate hues with other flowers of more gorgeous colours.

The common Bluebell, *Hyacinthus non-scriptus*; Forget-me-not, *Myosotis*; Daisy, double crimson and white; varieties of *Primulas*, usually known as *Polyanthuses*; *Aubrietias*, *Pansies*, *Wallflowers*, and many other familiar favourites are all employed at Waltham with charming effect. If to these are added the now-well-known *Alyssum saxatile*, variegated *Arabis*, and scarlet *Anemone*, it will be seen that a variety of and even brilliant display of colours are brought together, offering an almost unlimited field for the exercise of tasteful arrangement and combination. Few travellers on the Great-Eastern Railway can have passed the Waltham station within the last fortnight, without having their attention arrested by the beautiful circular beds near the railway, planted with the brilliant *Rex Rubrorum* Tulip, edged with *Bluebell* and *Alyssum saxatile*, and backed by other beds of plants above named.

I should not have made more than a few passing notes on these early hardy flowers, had not their intrinsic merits absolutely required more. To single out from amongst them one subject deserving especial notice, the *Polyanthus* tribe, or those varieties of it cultivated at Waltham, are the most conspicuous. The kinds selected are all distinguished for the mass of blooms produced by each plant; the colours are pleasing and distinct, equally suitable for massing or for single specimens. The same admirable discrimination is also shown in the selection of *Pansies*. All of these spring-flowering plants being perfectly hardy and easy of culture, I was glad to find that they are being propagated extensively, so that in another season no one need be without them.

Nor is it with herbaceous and bulbous plants only that the spring garden can be made completely attractive. With few exceptions, by far the greater number of ornamental trees and shrubs esteemed for their flowers produce them in the early months of the year; and in my opinion they should not be regarded simply as an adjunct, but a principal feature in the decoration of the spring garden; and although notices of single species and lists of selected kinds frequently appear in these pages, the subject admits of further elucidation—much more so the now numerous varieties of deciduous shrubs and trees with variegated or coloured foliage that show their "quiet beauty" later in the season. Easy of culture, growing in almost any soil, the planting and arrangement of deciduous trees and shrubs have nevertheless of late failed to receive the share of attention they merit. The contrast and relief such afford, in the summer and autumn months, to the masses of gorgeous colour now sought for in these seasons, have yet to be more fully developed. A more enlarged, and I think I may add a more enlightened, taste in ornamental gardening, is be-

ginning to be manifested. We shall yet see them in their proper place and rightly appreciated. The choice and at the same time extensive selection Mr. William Paul has at Waltham will do much to bring them under general notice; and I trust that in time able pens will direct attention to them, to which I will venture to hope to join my mite in a future paper.

But the Roses, the chief and most attractive of all the flowers at Waltham, I must beg pardon of the readers for my digression, especially of the very numerous ones who peruse "our Journal" almost solely for Rose intelligence. I am conscious of their impatience. Week after week have they had to look through the pages, and have found of late little or nothing respecting their favourites; and if we grant that the subject is well nigh inexhaustible, they should bear in mind that our Editors have to take cognisance of the whole range of subjects connected with horticulture, and each must have its turn. At length they will allow a little gossip about our flower; and the season for out-of-door bloom and the shows being at hand, we may anticipate our full share.

The Roses at Waltham are, as they always are, in fine condition. It is not my purpose here to raise any question *pro* or *contra* respecting forced Roses, but to record what I saw, and that which any reader may see and judge for himself on any day. Forced Roses are a great luxury; to prolong the season of our glorious flower in either direction is a great treat; and when accomplished, as Mr. W. Paul has for years past done, and shown how to do, there is not much room for argument in the matter. Roses if over-forced, or too early, or unskillfully managed, are eyesores to the rosarian; they are miserably deficient in form and colour, and too often their growth is "leggy." Not so with the splendid specimens exhibited by Mr. Paul, and other eminent growers, nor, indeed, with a single plant of the multitude now growing in the various glass structures at Waltham. With respect to colour, I may note an instance. If any Roses suffer in this point they are the dark kinds. Now, on the day of my visit (April 25th), a plant of *Empereur de Maroc*, one of the darkest Roses known, showed several blooms of its velvety maroon flowers without a single hitch or fault. Many specimens of other well-known kinds were similarly perfect. Hence, in offering the following notes of new kinds for the information of our Rose friends, I do so with something like confidence that when proved in the open air they will be found as now described.

ROSES OF 1867.

Charles Verdier.—Pale rose in colour. Very globular and full, not unlike the old Cabbage Rose, but better formed, and with more substance in the petals. Remarkably good.

Souvenir de Monsieur Boll.—One of the largest of Roses, carmine red, showing some resemblance to *Madame Boll* in habit and foliage. Very vigorous.

Antoine Ducher fully maintains the character given of it last autumn, bright red in colour, beautifully cupped, very remontant. A noble flower.

Comtesse de Jaucourt.—Somewhat like *Caroline de Sansal* in form and colour, but more regular and deeper, a kind of rosy flesh, decidedly beautiful, freely remontant. This variety promises to be a very useful garden Rose on account of its distinct and delicate colour, combined with free blooming. Of a large number of plants in Mr. W. Paul's houses nearly every one had one or more expanded flowers, with others immediately to follow.

Eugène Scribe.—Like *Jules Margottin*, with nothing particular to distinguish it from, or to induce a preference to that fine old Rose.

Madame Pulliat promises to be one of the best of its year; deep rose, full, globular, and vigorous; not quite so large as some of the preceding.

François Treyer is another addition to the host of scarlet crimson, or crimson scarlets; of excellent shape.

Madame Anna Bugnet will prove a favourite; colour delicate satin flesh approaching white; of beautiful shape.

Adrienne Marx.—Bright carmine red, large, not superior to others of similar colour.

Baronne Hausmann.—Bright cerise red, large, but not full; requires further trial.

Monsieur Furtado.—Tea-scented. This promises to become one of the most admired of Tea Roses; very large and full, perfect form, sulphur yellow, deeper than *Solfaterre*, and of much better shape; superb.

Madame Margottin.—Another Tea Rose of the same season

sustains the reputation it gained last year. A truly first-class flower.

ROSES OF 1868.

Boule de Neige.—A pure white Rose, of excellent shape, resembling *Madame Hardy*, very vigorous, and if sufficiently rampant will prove an acquisition, being the best white yet obtained in this class.

Madame Noman.—Another white, which at first sight I took to be *Madame Plantier*. The resemblance to that well-known variety both in flower and foliage, is very close indeed.

La France.—Lilac rose with deeper centre; colour not easy to describe; petals excessively recurved; like *William Rollison* in shape, but totally different in colour. It may please some people.

President Willermoz is a reproduction of *Lord Palmerston*, superior to the older variety on account of vigorous growth; bright cherry red in colour. By those who remember and admire the Rose named after the late veteran Premier, *President Willermoz* will be cordially accepted.

Madame la Baronne de Rothschild.—Thus far undoubtedly the Rose of the present season, strikingly beautiful in colour and form; a pale satir rose, of perfect form and substance, exquisitely shaped, growing well. This lovely Rose not only promises to be the best of the season, but to obtain a reputation that will endure for years.

Souvenir de Francois Ponsard.—Another Rose with a very long name, and close resemblance to our old friend *Jules Margottin*, perhaps a little lighter in colour. Very fragrant.

Merveille d'Anjou, described in the French lists of last autumn as being of a purplish red. A desirable colour, but the red so predominates that the purple element is difficult to discover. Altogether not very promising, further trial may show it to better advantage.

Clotilde Rolland proves true to description—that is, beautiful pale rose, with the form of *Madame Furtado*. We have in this variety a vigorous growth with all the excellence of that fine Rose. *Madame Furtado* will now be given up.

Baron Hausmann.—In the notice of last year's novelties there is one named after *La Baronne Hausmann*. I may have made a mistake in my notes, for they are as much alike as two peas; but it matters little, for neither as yet shows any likelihood of gaining favour.

Duchesse d'Aoste.—Another rose-coloured variety, large and full, *Jules Margottin* over again nearly. The blooms I saw of it were good.

Prince Humbert.—A good dark Rose, likely to gain favour for a time, but not superior in my opinion to *Souvenir du Comte Cavour*, by the same raiser (*Margottin*, of *Bourg-la-Reine*), which it much resembles in colour. It is, however, fuller. It is evidently not equal to such flowers as *Senateur Vaise*, *Lord Macaulay*, and others of the same class.

Madame Marie Cerodde.—Very much like *Baron Gonella* in form and colour, sometimes described as "dove pink," very fragrant and beautiful. A good Rose.

In the house assigned to Tea Roses at Waltham, the bloom was abundant and fine. The following, most of them well-known and esteemed kinds, I have noted as the best:—*Boule d'Or*, Climbing Devonensis, like the old Devonensis, first-rate; *President*; *Madame Willermoz*, very fine but delicate in colour; *Souvenir d'un Ami*, still one of the very best in its class; *Jaune d'Or*, not much of yellow or gold about it; *Comte de Paris*; *Narcisse*, *Niphetos*, *Solfaterre*, *Madame Falcot*, *Celine Forestier*, *Madame Bravy*. But, see, there is one among them of a very different class, with gorgeous flowers of unrivalled brilliancy, making its way to the very top of the house, sending forth buds and grand flowers at every step in its progress, clothed with massive foliage of beautiful glossy green hue—a Rose that possesses every good quality yet discovered in any or every variety, blooming early in the season, continuous through it till the frosts of winter alone stop it, suitable for pillars, forming a fine head as a standard, flourishing in soils where many will not grow, on its own roots, on the *Manetti*, on the *Briar*—its name is *Charles Lefebvre*.—*ADOLPHUS H. KENT*.

PRESERVING PEAS FROM MICE.—Among the numerous plans recommended for preserving new-sown Peas, &c., from the ravages of mice and birds, I have never observed the following:—Cut up, tolerably fine, in a hay-cutting machine, a quantity of common Gorse, and sow it rather thickly on the top of the Peas, then cover up with soil. The Gorse does not seem in

the least to prevent the Peas coming up, and I have tried it a good many times, and have never known it fail.—*J. G.*

[The plan has been frequently recommended and practised very successfully.—*EDS.*]

ROYAL HORTICULTURAL SOCIETY.

THIRD SPRING SHOW.—*May 9th*.—This was not a success so far as the flower which was intended to have constituted the principal feature was concerned, for the magnificent specimens we have been accustomed to in former years were absent; so were the Roses, but of miscellaneous subjects there was, as at the previous show, an extensive and interesting display.

In Class I, nine Azaleas, for nurserymen only, there was no exhibition. In Class 2, for amateurs, Mr. Wilkie, Oak Lodge, Kensington, was first with well-bloomed plants, about a yard high, of *Criterion*; *Stella*, a brilliant-coloured variety sent out by Messrs. Veitch two or three years ago; *Concinna*, lilac purple; *Marie Vervaeke*, white, flaked with rose, a beautiful variety; *Eulalie Van Geert*; and *Rubens*. Mr. F. A. Steel, Hammersmith, was second, with, among others, a large plant of *Semiduplex maculata*.

In the nurserymen's class for six, by far the best collection of Azaleas in the Show was exhibited by Messrs. Lee, of Hammersmith, and deservedly received the first prize. They consisted of *Duke of Devonshire*, salmon scarlet; *Extraneus*, a fine mass of rosy crimson flowers; *Leeana*, white; *Petunioflora*, rosy lilac; *Marie Louise*, crimson; *Victoria*, white, spotted and flaked with purple. Messrs. Dobson & Sons, Isleworth, took the second prize with a compact bushy specimen of *Murrayanum*; *Bouquet de Flore*, not sufficiently forward; *Iveryana*, *Model of Perfection*, *Delicata*, and *Duc de Nassau*, semi-double, crimson.

The only exhibitor in the class for single specimens of Azalea was Mr. Wilkie, who had a first prize for a plant unnamed, but apparently the old white, forming a fine pyramid standing about 7 feet high, and covered with bloom.

Of *Rhododendrons* Mr. Wilkie exhibited half a dozen standards with large heads covered with fine trusses of white, pink and lilac, and crimson flowers, and took a first prize; likewise a similar award for a fine standard. Mr. Steel, Hammersmith, was second with a small but well-bloomed plant of the variety called *Purpureum grandiflorum*.

Of *Auriculas*, the only exhibitor was Mr. James, gardener to W. F. Watson, Esq., Isleworth, who sent, of Green-edged, Miss Farnell and *Lancashire Hero*; Grey-edged, Jane Smith and *Duke of Cambridge*; White-edged, *Smiling Beauty* and *Model*; Selfs, *Cheerfulness* (*Turner*), and *Royal Purple*. Miss Farnell, Jane Smith, and *Smiling Beauty* were excellent, and the rest were in good condition for this period of a season when the bloom in the south has been rather early, and Mr. James deserves credit for retarding his plants so successfully and producing such a good exhibition, the only one in its class. A first prize was awarded him for these, likewise for half a dozen *Alpine Auriculas*.

Of *Polyanthuses*, both Mr. James and Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, sent well-grown and well-flowered plants. Among those from the former were *Goldfinch*, a showy free-flowering kind and well laced, *Juliet*, and *Picturata* also attractive; while Mr. Wiggins had *Maggie*, a rich-coloured flower, and *Gold Crown*, a dark ground, conspicuously laced with yellow. Mr. James took the first prize, Mr. Wiggins the second.

Of *Paucias* in pots, Mr. James, who was awarded a first prize, had a beautifully-flowered set of eight, consisting of *Rev. H. Dembrain*, *Dr. Ingler*, *Baronne de Rothschild*, *Cherab*, *Vesta*, *J. B. Downie*, *Dr. Smith*, and another. Messrs. Dobson took the second prize; and Mr. Sheuton, nurseryman, Biggleswade, and Mr. James, had extra prizes for stands of cut blooms.

Prizes were also offered for *Lily of the Valley*. Mr. Reeves, *Ladbroke Nursery*, was first with pots in excellent bloom; Mr. August, of *Beddington*, being second, and Mr. Wilkie third.

The best collection of twelve *Alpine* plants came from Mr. Salter, of *Versailles Nursery*, Hammersmith, and in it were *Smilacina bifolia*, with small heads of white flowers; *Saxifraga aizoon*, and *S. hypnoides* minor, a pretty, dwarf, moss-like plant, which forms a neat covering for borders; *Arenaria balearica*, with flowers like minute white stars; *Aubrieta deltoidea variegata*; *Sedum glaucum*, which forms a charming carpeting; *Sempervivum Pattonii*, and *S. arachnoideum*, very interesting from its appearing to be covered with cobwebs, a circumstance from which its name is derived. Mr. Ware, *Tottenham*, who was second, had various *Saxifrages*, conspicuous among which was *Saxifraga granulata plena* with large double white flowers, also *Sedum Forsterianum*, having a reddish tinge.

Of miscellaneous subjects there was, as already remarked, an extensive display. Mr. Williams, of *Holloway*, had an extra prize for a collection containing a finely-bloomed specimen of *Clerodendron Thomsonae Balfourii*; *Saccolabium retusum*, *Cypripediums*, and other *Orchids*; *Aphellexes*, *Heaths*, *Eriostemons*, *Amaryllids*, *Genetyllis Hookeri*, *Franciscea calycina*, and a good example of *Anthurium Scherzerianum*. Mr. Bull had a similar award for a collection in which there were several new *Coleuses*, the best apparently being *Gem*, chocolate with a green edge, and *Crimson Velvet*, reddish chocolate,

both richly coloured varieties. Among his other plants we noticed a fine specimen of *Cibotium regale*, a fine pair of variegated Aloe-leaved *Yuccas*, a beautiful mass of *Trichomanes radicans*, *Anemia lineata*, and *Dracena Banksii* in flower, Bronze and Gold Zonal *Pelargoniums*, *Azaleas*, and a pretty striped *Petunia*, called *Herald*.

Messrs. Veitch sent a remarkably fine group of plants not for competition, consisting of *Sauzechia nobilis variegata*, one of the best-marked of new variegated plants; *Maranta Veitchii*, now well known as one of the finest of the *Marantas*; *Alcascia Jenningsii*, with bright green leaves regularly marked with dark blotches betwixt the veins; *Abutilon Thompsoni*, with leaves blotched and mottled with gold; *Azalea Stella* and *Marie Vervaene*; *Primula cortusoides amena*, of which a striking variety was shown at the last Floral Committee; *Davallia parvula*, with pretty finely-divided fronds; a specimen of *Cypripedium candidum*, with five fine flowers with tails 2 feet and more in length; *Begonia boliviensis*; *Nepenthes Rafflesiana*, with ten large pitchers; *Anthurium Scherzerianum*, with ten of its brilliant scarlet spathes, and three more about to expand; and, lastly, the new *Colasias* which the firm has recently acquired, and which, it cannot be doubted, are destined to take a high place in ornamental gardening. Messrs. Lee sent, likewise not for competition, a collection of plants, in which were good examples of *Orchids*, *Heaths*, *Azaleas*, *Eriostemons*, *Yucca quadricolor*, and *Cordylina indivisa*; and Messrs. F. & A. Smith, Mr. Wilkie, and Mr. Reeves had extra prizes for miscellaneous collections; Mr. Bartlett for a number of pots of *Spiraea barbata* or *Hoteia japonica*; Mr. James for fine herbaceous *Calceolarias*, also for *Cinerarias*. An extra prize was also awarded to Mr. Salter for a large collection of hardy variegated plants. Among them were *Beta chilensis*, with violet crimson shaded stalks; several *Funkias*, *Spiraea linnaria*, with the centre of the leaflets striped and blotched with golden yellow; variegated *Lily of the Valley*, very pretty; *Hemerocallis Kwanso plena variegata* with long white-striped leaves; *Sedum Sieboldi variegatum*; *S. Faberianum variegatum*, yellow, edged with green, and *Trifolium repens rubrum* with chocolate foliage edged with green. Mr. Ware also received an extra prize for a pretty collection of herbaceous plants, in which were several with ornamental foliage, the pretty white *Phlox Nelsoni*, the rose-coloured *Phlox setacea*, *Cheiranthuses*, *Anbrietias*, *Lithospermum fruticosum*, which attracted every one by the intense blue of its flowers, *Trillium grandiflorum*, *Dodecatheon elegans*, *Iris pavonia*, and many others.

Messrs. F. & A. Smith, Mr. Watson, and Mr. Shenton sent variegated Zonal *Pelargoniums*, of the *Tricolor* and *Gold and Bronze* sections; and Mr. Mann, Brentwood, his splendid scarlet-flowered variety, *Lord Derby*, which fully maintains the high character which has been given of it in previous reports; also trusses of *The Baron*, a showy crimson scarlet *Nosegay*. A collection of *Gloxinias* came from Mr. August, Beddington; and from the Society's garden at Chiswick a large collection of *Palms*, *Dracenas*, *Pandanads*, and other plants with ornamental foliage, and the new *Caladiums* raised by Mr. Bause. The leaves are pale green, with a strong golden tinge, and are variously marked: in one kind with crimson, in another with white and crimson spots, and in a third these are seen on a silvery ground. These varieties, one parent of which was *Caladium bicolor splendens*, will, doubtless, attract much attention as they become more fully developed, and they promise to become charming additions to our ornamental-foliaged plants. There was also from Chiswick *Anthurium Scherzerianum* with seven fine spathes.

RED BEET AS A FLOWER-GARDEN PLANT.

I AM sorry I am not acquainted with the variety of Beet of which my friend Mr. Perkins gave an account in page 421 of your last volume, neither can I lay claim, I fear, to being the first to call attention to this plant for flower-garden decoration. Twelve years ago, or more, when the beauty of the foliage of certain plants, as *Dracenas*, *Crotons*, and *Marantas*, became fairly acknowledged, I urged, it is true, the claims of plants of a humbler class as deserving more attention than had been paid to them, and mentioned the *Globe Artichoke*, *Fennel*, *Red Beet*, coloured *Kale*, *Carrots*, and *Parsley*, and suggested that an effective striped border (the term ribbon border not having then been invented), might be composed of these plants, as each of them might be considered likely to last the season. I must confess to not having used the Beet so much as it deserves, in consequence of the variety I had, though good for salads and culinary purposes, having a propensity to run to seed at the precise time at which the other occupants of the same bed were at their best, and instead of the graceful, recurved, and flowing foliage, a few small pointed leaves were all that was left when the seed stem was removed, and removing one seed stem only induced the plant to produce more; otherwise I must admit that when at its best nothing can well exceed the glittering beauty of Beet when of a good colour and looked at in sunshine. I have found, however, from the limited trials which I have made, that this period of perfection is of short duration; therefore I have mostly used another plant—*Perilla nankinensis*—which I fear Mr. Perkins

will think a sorry substitute for Beet, yet it is not destitute of merit.

The *Perilla* is most extensively grown here as a dark-leaved plant; and although *Coleus*, *Iresine*, *Amaranthus melancholicus ruber*, and Beet may all be better than *Perilla* when at their best, their services are either obtained at a greater cost as regards potting, or they are of shorter duration. The *Perilla* may, without much trouble, be grown to show a tolerably good line by the 1st of June; and that line may be kept trimmed to a height corresponding with neighbouring plants until the end of the season, say the middle of November, and will look well the whole time, as there are comparatively few plants which furnish such an abundance of foliage on specimens struggling continuously into seed. Some plants will succumb altogether when the flower stems are continually cut off. Even perennial ones do not always like to have the intentions of Nature frustrated in so persevering a manner, and in this way great losses are met with in the case of *Centaurea gymnocarpa* and other plants; but the *Perilla* seems to endure cutting-in almost as well as grass itself, and when viewed at the distance of 50 or 100 yards its appearance is very often as good as that of the *Coleus*, and very much better than that of the *Iresine*—in fact, the latter has been so often a complete or partial failure, that it will only be used in future in places of secondary importance.

I may state in favour of the *Amaranthus*, which in 1867 did very well here, that it has the richest appearance when looked at with the face of the observer to the sun. This is exactly the reverse of what happens in the case of many other plants. Those, therefore, who have their flower beds on the south sides of their principal walks or lines of vision may safely plant *Amaranthus* if other conditions be favourable, as the semi-transparent character of the leaf allows so much light to shine through it as to show the rich colouring to great advantage. On the other hand, many flowering plants—the blue *Lobelia*, for instance, look best when viewed the reverse way, as so many open to the sun.

To return to Beet as an ornamental plant. As a variety has been pointed out which can be sown in March, and yet does not run to seed, we have in it a great acquisition for flower-garden decoration, as Beet can be transplanted as well as most plants, and, as Mr. Perkins says, is both ornamental and useful afterwards. A friend of mine in Hertfordshire, who grew it as well as the *Coleus*, *Amaranthus*, *Perilla*, and *Iresine*, during the past season, affirms that it excelled them all. The best examples that I have met with, I saw in Yorkshire some years ago; but, as I have before observed, merely looking once at a plant when it is at its best, is not a sufficient knowledge of it to justify unqualified praise. I once knew a lady in raptures with a bed of blue *Nemophila*, but she was not, perhaps, aware that its display extended only over six or seven days. That Beet will remain in beauty longer than that there is no question, but whether for both early and late display it can be depended upon to continue good, is more than I can decide. That it will be useful for its foliage late in the season I know, but where as much bloom and colour as possible are wanted before the 1st of August, or say from June 1st to that period, what experience I have hitherto had with Beet tends to prove it is not so much to be depended on as the *Perilla*.

Mr. Perkins justly calls attention to the utility of the foliage of Beet for embellishing the dishes of the dessert, and I can fully endorse all he says as to its merits in that respect; but there is also another plant of which the utility of the foliage for the dessert has never been fully recognised, although I have known it employed for the purpose as much as thirty years ago, and that is coloured *Kale*. The best variety is the white, as the rosy purple kinds, however rich and pretty in daylight, do not look well at night. The Beet in foliage is no mean competitor to the exotic *Dracena*, and if when gracing a flower stand it should be mistaken for a new *Calla* or *Caladium*, what matter? Ought beauty when combined with utility and simplicity to be condemned because of the two latter qualifications? Assuredly not, rather let us carry the matter further, and see if other useful plants do not furnish us with forms that may be turned to account. I have on more than one occasion seen a half-blanced half-dead leaf of a very common plant take a place with great advantage in a bouquet, and the reader will be more startled in this second case than in the former, for the plant was the common *Carrot*. Yet it is so. In a *Carrot* bed may be met with leaves of a rich orange colour, having all the Fern-like character of fresh ones. I hope to hear more of Mr. Short's Dwarf Beet, and if it do not run to seed during the summer after being sown so early, it will probably be more

extensively grown than has yet been the case, and for one I should like to try it.—J. ROBSON.

[In the kitchen garden at Wollaton Hall, near Nottingham, there were last year borders of Dell's Beet, which, when we saw them in September, were very effective, and, as Mr. Robson remarks, their produce was useful as well.]

VERBENAS.

As an admirer and grower of the Verbena I beg to tender my best thanks to Mr. W. Dean for his notes on Mr. Perry's new varieties to be sent out during the present spring, and for his excellent list of older sorts. I can fully endorse the high character which he gives them.

It is difficult to imagine anything finer than such superb varieties as Miss Turner, Hercules, Mrs. Mole, &c.; the first-named variety especially, with its large, bold, and handsome truss of finely-formed flowers, must, I think, be regarded as the very best light variety ever offered.

I wish Mr. Perry would kindly give us through the pages of the Journal his mode of growing the Verbena for exhibition; I am sure he would have the best thanks of all growers of this fine flower if he would give us a thoroughly detailed account, and also his mode of raising seedlings. I have found some difficulty in inducing the seed to germinate when sown in heat, and have this year sown a small quantity saved from such finely-shaped flowers as Snowball, William Dean, Mrs. Turner, &c., and placed it in a cool greenhouse, with what results remains yet to be seen.

It has been stated that the seed is more certain of germinating when sown in the open ground, but I fear by this system the seedlings would bloom very late, and it would be difficult, perhaps, to judge what were worth proving in the following year.

It is a matter of regret that this fine flower does not receive more encouragement at our leading exhibitions, for, with the exception of the Crystal Palace Autumn Show and a few others, the prizes offered are very small; framers of schedules would do well to look to this, for few cut flowers, or indeed any flowers, have a finer appearance than a good stand of twelve or twenty-four varieties in three or five trusses each. In my opinion it is quite absurd to give £5 or £10 for a collection of, perhaps, half a dozen greenhouse plants and as many shillings for a stand of Verbenas, as is done at a great many of our autumn shows; for I have noticed that where really good cut flowers, such as Roses, Gladioluses, Verbenas, &c., are shown they have crowds of admirers where the plants receive but small attention, although exhibited by some of the best growers, and I think it is quite time we had a fairer division of prizes in our schedules.—E.

AURICULAS.

I SEE that your reporter takes exception to my statement as to the time of showing these plants. May I be permitted to justify my statement by saying that no argument can be adduced from last season, as I never recollect such a season since I have been an Auricula grower? and I think I can appeal to any Auricula fancier in the south of England as to whether the general time of their being in perfection is not from the 15th to the 30th of April.—D., Deal.

ENTOMOLOGICAL SOCIETY'S MEETINGS.

The April Meeting of this Society was held at Burlington House, H. W. Bates, Esq., the President, being in the chair.

Mr. Stainton exhibited some leaves of *Euphorbia dendroides*, just received from Mr. Moggridge from Montone, which were mined by larvæ of a minute moth (*Nepticula euphorbiella*), specimens of which had been recently reared from larvæ collected in the early part of last summer at the same place. Mr. Stevens exhibited the insect which had served Mr. Stainton in 1851 for the description of his new species *Neophora Carteri* (formerly in the collection of Mr. Carter, of Manchester). A recent examination of the individual had proved it to have been fabricated, the hind wings of a *Cerostoma* having been attached to the fore wings of a *Neopteryx*. Mr. Boyd exhibited a strongly-marked dark variety of *Stenopteryx hybridalis* from Hertfordshire. Mr. Druce exhibited a collection of Butterflies obtained by Mr. Pearson in Bolivia, including the very rare *Papilio zagreus*, &c. Mr. Weir exhibited a *Polioptamus*, captured at Lewes, which he regarded as a hybrid between *P. Adonis* and *Alexis* also *P. Corydon*

and *P. Alexis*, with the spots on the under side of the wings confluent and a male-like female of *P. Alexis*.

Mr. Smith stated that in the collection of insect productions in the British Museum was a portion of a pollard Oak, sent there three years since by Mr. Kidd, exhibiting a great number of the gall nuts. It had been placed in a box with a large lump of camphor, yet each succeeding spring there had been reared from it a number of individuals of *Clytus Arietis*, on which, whilst in the preparatory state, the camphor had had no effect. Mr. Janson said that camphor, though useful in preventing the entry of insects, was powerless to destroy them; at the same time he doubted whether the *Clytus* had been reproduced by breeding in the Museum, considering that the larvæ of the beetle were in a more or less advanced state when the block was received at the Museum, and that the successive broods of 1866, 1867, and 1868 (for one specimen had been produced on the morning of the Meeting), had been hatched from eggs deposited in 1865 or in previous years.

The May Meeting was held on the 4th inst., presided over by H. J. Stainton, Esq., Vice-President. Amongst the donations received since the last meeting were the publications of the Linnean, Royal, and Royal Agricultural Societies, the Royal Society of Brussels, the Imperial Society of Moscow, Messrs. Vollenhoven, Hewitson, and Sir John Lubbock, &c. The most important of these works was the first part of the Catalogue of Scientific Papers (arranged alphabetically), published by the Royal Society, which, when complete, will extend to from twelve to twenty quarto volumes.

Mr. Boyd exhibited a number of carefully-preserved caterpillars of different British species of Butterflies and Moths, and Mr. Trimen a specimen of the Emperor Moth (*Bombyx pavonia minor*), which had died in attempting to escape backwards out of its cocoon. Mr. McLachlan exhibited specimens of the fine Dragon Fly, *Anax mediterranea*, which had appeared in large swarms in Italy, received from Signor Ghiliani, of Turin. Mr. F. Smith exhibited a caterpillar of one of the Staphylinidae, found underground by Mr. Janson, jun., which had been destroyed by several parasitic larvæ of a species of *Proctobrupe*, the pupæ of several of which still remained in an undeveloped state attached to the ventral surface of several of the alternate rings of the body of the victim.

Mr. Stainton called attention to a well-executed plate contained in the first volume of the Memoirs of the Academy of Sciences of Paris, published in 1750, in which were represented the transformation of a small but curious Lepidopterous insect, which feeds on the Vines in France, belonging evidently to the genus *Antispila*. The caterpillar was remarkable for being entirely destitute of legs, but no further information beyond the plate in question had ever been obtained or published.

Mr. F. Smith exhibited specimens of three kinds of insects injurious to timber trees in India—namely, *Cerostoma gladiator*, a Longicorn Beetle, which attacks the bark; a large Acheta or Cricket, which makes its appearance in large numbers in September after the rains, and gnaws off the young shoots of *Casuarina* trees when they are two or three lines thick; also specimens of the Borer Beetle, *Clytus quadripes*, the larvæ of which bore into the trunk of Coffee trees. Mr. Trimen stated that a large species of Cricket at the Cape of Good Hope also eats off the young shoots of the Silver trees. Dr. Wellan sent for distribution a number of eggs of the *Bombyx Yama-Mai* or Oak Silk-worm of Japan. A note was read from Mr. Hewitson on the synonymy of a species of Pieridian Butterfly from New Caledonia.

A paper by Mr. Desborough on the duration of life of the different members of the hive was read. The author had succeeded in ascertaining that in certain cases the queen bee will survive and deposit eggs during not fewer than six seasons, whereas the worker bees only live about eight months. A single queen had produced as many as 108,000 eggs, which would be about 20,000 a-year; but the greatest amount of eggs was deposited during the first two years of her life, only about 15,000 being laid during each of the last three years.

Mr. F. Smith read descriptions of a number of new species of Hymenopterous insects, sent from Champion Bay, Australia, by Mr. De Bonlay, more than half the specimens collected by that gentleman having proved to be undescribed. He observed that it was remarkable that whilst the leaf-eating bees were numerous in New Holland, he had never seen one of their usual parasites belonging to the genus *Cichoxys* from that country.

Lieut.-Col. Taylor sent for exhibition a number of specimens of seven different kinds of insects and larvæ which attack the Coffee plant in Upper India. Capt. Taylor, who was present, gave an account of the ravages of these insects in Koorag and Ceylon. The subject led to an extended discussion, and was ultimately referred to a committee to draw up a report on the subject. Two new parts of the Society's Transactions were upon the table.

FLOWER POTS.

INQUIRY is often made as to the best form for garden pots, and in reply I wish to tell that I brought a few from Dieppe some time ago, which I like better than any other which I have seen, yet, I think, they may be improved on. This is

the shape. (See *fig. 1*.) You will perceive there is great strength where it is most wanted, and that the pots will fit into each other without sticking fast. Indeed, with a stake



Fig. 1.

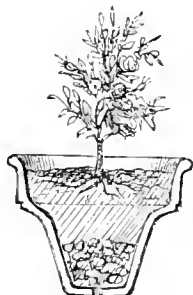


Fig. 3.

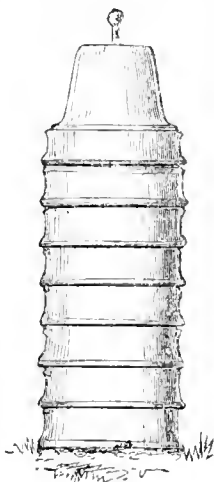


Fig. 2.

run through the holes they would form very strong and neat pillars in the garden when not otherwise in use, and be out of the way, instead of being an eyesore. *Fig. 2* is a representation of a pillar formed in this way.

It appears to me, however, that by having a portion of this thickness at the shoulder taken off on the inside you will improve the form materially, as is represented in *fig. 3*.

In this form you have a chamber for the drainage, a wide bed for the roots, promoting surface-rooting, space for mulching and watering, and a form which easily admits of the plants being turned out, and the external form and strength are retained.

I find it very convenient to use an apparatus like a crinoline, which is easily made by a piece of muslin thrown over a frame, for fumigating individual plants when I do not want to close the whole house. I put it over the pot so as not to touch the plant, and place a pan of lighted tobacco-paper under it. I also use it for standard Roses.—D. S.

[This communication will afford to "AN AMATEUR," "MYRA," and other correspondents information on which to form their own judgments in answer to their variously expressed query, "Which is the best form of flower-garden pot?"]

The inventions to satisfy various requirements in such pots have been numerous, but we do not know whether they can now be purchased, for with rare exceptions they have that fatal characteristic—dearness. The following are some of them, published in one of the earliest of our volumes:—

To facilitate draining, and yet to retain the tidiness secured by the saucer, Mr. Hunt has had flower pots made (*fig. 4*), with elevations, on which the pots are placed. But this is not the only advantage derivable from them. They prevent the entry of worms, may be employed with common stands, allow a current of air to pass beneath them, and their form is elegant.

Mr. Brown has proposed a pot (*fig. 5*), with hollow sides, the



Fig. 4.



Fig. 5.



Fig. 6.

vacuity to be filled with water through a hole in the rim, or left empty, as occasion requires. The water, he considers, will prevent the plants suffering from want of moisture; and when empty, the roots will be preserved from being killed by evaporation. But surely applying the water to the sides will be an extra inducement for the roots to gather there, an effect most desirable to avoid, and wetting the outsides of the pot is a very doubtful mode of preventing the reduction of temperature.

Saul's fountain flower pot (*fig. 6*), seems open to the same objections, with the additional disadvantages of not being easily drained, and being more expensive and cumbersome. The water is also forced in at the bottom of the pot, contrary to the course of nature in applying moisture to plants. "An outer basin is made on the bottom of the pot, to which the water enters at *a*, and is carried round the pot in the basin, there being two or three holes through the pot's bottom, *b, b*. By these means the water is drawn up from the basin by the roots of the plants, or, if it should be desirable to prevent it from being drawn up, the exterior orifices of the holes, which open into the basin or saucer, may be closed. The fountain is supplied with water by taking out the stopper at *c*, the entrance into the basin at *a* being at that moment closed; and as soon as the water runs over at *c*, the cork or stopper is put in, and the stopper at *a* removed."

Mr. Stephens's flower pot (*fig. 7*), is intended to supply water to the plant where it is most wanted, and to protect it



Fig. 7.



Fig. 8.

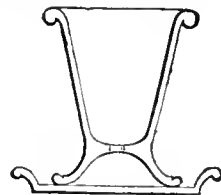


Fig. 9.

at the same time from slugs and creeping insects, which will not pass over the water between the two rims.

Mr. Rendle, of Plymouth, proposed to improve the drainage of pots by elevating and piercing their bottoms. This, and Mr. Brown's, suggested to us that of which *fig. 8* is a section. It is merely two pots, one fitting within another, having the bottom indented and pierced as proposed by Mr. Rendle, but not touching the outer pot by half an inch all round. This is a most effectual form to secure drainage, and to prevent the evaporation from the sides of the inner pot, the intervening stratum of confined air being a bad conductor of heat. It has the merit, too, of cheapness.

Another pot (*fig. 9*), adopted by T. C. Palmer, Esq., of Bromley, Kent, has been found by him to have the advantages that it induced worms to pass out, yet prevented their return; was very effectual to keep out ants, slugs, &c., as it stood in a saucer of water without any excess of moisture reaching the soil; and from this quality might be particularly suitable for Heaths.

One of the inconveniences attendant upon pot-culture is the hardening of the surface soil by watering. This may be obviated by having the rim of the pot (*fig. 10*), encompassed by

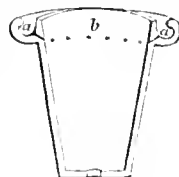


Fig. 10.

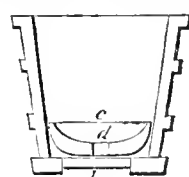


Fig. 11.

a gutter, *a, a*, communicating to the earth within the pot by numerous perforations, *b*. Water poured into the gutter would thus gently percolate away into the earth.

Fig. 11, is a form that is useful for facilitating the shifting of specimens in large pots. It was patented, we believe, by Mr. G. Fry, formerly gardener at Lee Park, and named by him the "West Kent Garden Pot." The drawing represents a section of it. The pot is without a bottom, the orifice *b* extending across its entire diameter, except a narrow ledge all round, on which rests the false bottom, *c*, perforated as usual with the drainage hole, *d*. The principal advantage of this form is that at shifting time, a block of wood of the size of the orifice *b*, being pressed up, it moves the ball of earth bodily, thus disturbing the roots as little as possible.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

EVERY showery day should now be taken advantage of to plant out young crops, to thin and prick out others, and to look

diligently after slugs and snails. Every moth and butterfly should be as carefully destroyed as wasps. *Broccoli*, *Cauliflowers*, and other plants of the Cabbage tribe from the early seed beds may now be planted for autumn use. *Cucumbers* and *Vegetable Marrows*, prepare for planting these out, forming beds of short grass, refuse from Sea-kale beds, &c., or any other littery rubbish, but in exposed situations a week or ten days hence will be soon enough. *Peas* and *Beans*, after having pinched out the tops of the first crops of these give a good watering, and if any sort of liquid manure is employed all the better, but do not use hard spring water if it can be avoided. *Potatoes*, the early ones will now be forward enough to have the soil well stirred between them, like all other crops in rows. *Succession crops*, in all their stages, will now show if the sowings have been judiciously timed. Endeavour to mark out any probable defects, and, if practicable, lose no time in rectifying them. *Tomatoes*, *Capsicums*, and all half-hardy plants for the kitchen garden, may now be planted out in early and favourable situations; but in cold exposed places a week or ten days will suit them better.

FRUIT GARDEN.

All the trees on the walls will now require close attention. The system of nailing as many of the strong young shoots of Pear trees as possible between the main branches is good, and if it is not desired to leave them to bear, the grower may begin to reduce them after the end of July. Peach trees, like Melon plants, are very apt to get into confusion about this time, unless they are carefully thinned. Formerly wall trees seldom had much attention paid them till all the breastwood was nearly full grown. They were then regularly pruned, and you could see where the pruner left off at night as plainly as where mowers had left off cutting a piece of meadow grass; but now a man in looking over his trees only cuts out a few shoots here and there at a time, and in this way he soon goes over a large number, and when he has gone round, some of his trees will want looking over again. Some gardeners adopt the practice of pinching out the tops of the young shoots of Pear trees when from 4 to 6 inches in length, and this proceeding is repeated during the season. It is recommended, because there will be no danger of the lower buds breaking, no sudden check will be given to the system, no unnecessary shade afforded to those parts which ought to be fully exposed, and if persevered in, and the tree is otherwise favourably situated, there will be little occasion for resorting to root-pruning.

FLOWER GARDEN.

Multitudes of tender plants have, doubtless, been planted out, and as the weather has been as ungenial as it can be for such operations, nothing but assiduous attention to watering and shading can give them a chance of success. The importance of properly mulching the beds cannot be too much insisted upon, and where it is inconvenient to use short grass because of its untidy appearance, the beds should be surfaced an inch thick with leaf mould or fresh light soil, and where neither can be used hoe the beds over so as to produce a loose surface. Mulching is advantageous, not only from saving labour, but also, where cold spring water has to be used, from preventing the soil from being unnaturally cooled by the frequent application of water from a cold medium. The importance of using water as warm or even warmer than the soil is well known to practical men, and a few experiments will soon satisfy the amateur of its advantages. After planting out, make a reserve of a few plants of each kind to fill up gaps, and also if you fill any beds with annuals reserve some plants in pots to replace them as soon as they become shabby. The "worm" of the bud" amongst Roses is making considerable havoc in some places. Look carefully over the plants, and destroy the maggot between the finger and thumb; regulate the growth of the plants at the same time. Seedling *Anticulas* may now be pricked out into pans or boxes of leaf mould and sand, at regular distances, keeping them in a close frame for a few days till they have taken fresh root, when they may be placed in the shade and protected from drenching rains. *Ranunculuses* are now growing fast, but are much in want of rain. If they have been top-dressed with very rotten manure, they will in some measure have escaped the effects of the drought. As *Carnations* continue to grow keep them regularly tied up to their flowering stakes; the pots must also be well attended to, all weeds must be removed, and the plants top-dressed. Continue to remove luxuriant shoots of *Pinks*, and thin the buds, removing those which are small or malformed. Both *Pinks* and *Carnations* are now much infested with insects, these must be carefully brushed off; avoid bruising them on the buds or stems

of the plants, as it appears to have a prejudicial effect. *Dahlias* may now be planted out with safety.

GREENHOUSE AND CONSERVATORY.

With the exception of the routine of watering and syringing, the next matter of importance to greenhouse plants now in active growth is to form them into handsome specimens—some by training, others by pruning, or rather stopping, and all by being kept in a vigorous healthy state. One of the greatest faults committed against young promising specimens is to let them flower too early. If the plant is quite new there is no resisting this course, but in all other cases avoid it as much as possible. In the hurry of watering it often happens that the centre of the balls of large specimen plants, *Orange trees*, &c., is allowed to become very dry, the water finding its way down near the outside, where the soil is looser. Gardeners on the Continent make a provision against this, which we seldom see done in this country. They scoop out a little of the soil round the stem, and raise that towards the edge of the pot or tub, thus forming a shallow basin, so that a large portion of the water passes down the centre. In summer this is a good plan for many plants, and in winter the surface could be levelled over in the usual way. Do not be in a hurry to turn out of doors fine greenhouse plants; but all coarse and common plants, and many softwooded plants whose tops in a manner may be considered to be annual, may be turned out any time about the end of spring, and the finer portions of the plants will by this means have all the room, light, and air to themselves. Of all plants those in the greenhouse are most apt to become too dry in summer; and therefore, besides the regular watering, they may be syringed every afternoon in fine weather.

STOVE.

Many stove plants would do better in an intermediate house from this time till the end of August, where they would suffer less confinement than in a regular stove. For want of such a house gardeners often make use of vineries, &c., for this purpose, and distribute their stove plants in summer through the different forcing houses; and if only for the benefit of finishing and ripening their growth without being crowded, this is a good plan. Air, moisture, and cleanliness are now such matters of course that they need not be insisted on.

PITS AND FRAMES.

These are applied to so many purposes from this time to next September, that no calendar can anticipate the different treatment in all cases. Where plants are more an object than fruit, cold pits are the very best places for *Heaths* and all delicate greenhouse plants. A mixed greenhouse is an indifferent place for ripening-off the growths of *Camellias* and Chinese *Azaleas*, two tribes whose flowering next year depends on the treatment they receive at this time. Close pits shaded in the middle of the day, and kept moderately moist, suit them best.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Seeds.—As our first-sown vegetable seeds either will not come up as we want them, or, in despite of our netting, the birds have found their way in and have taken the lion's share, we levelled and made fine a border and covered it with hand-lights from the early *Cauliflowers*, sowed the seeds under the hand-lights, and, after watering, covered up with mats. We set the lights in double rows some distance apart, so that the seedlings will have room to extend laterally, and this plan will at least secure everything like fair play to the seeds, and give us a fair return if they are, as we feel tolerably sure they are, all right on the whole. A very little matter often makes a great difference in seedlings, and of all things nothing is more injurious to them than extreme dryness just when vegetation has commenced. From this cause alone we are able to decide why one pot of seeds never comes up and another pot of seeds from the same packet comes up as thickly as grass on a lawn. We may here mention, that when scarce of some seedlings of favourite vegetables, we have had fine returns in going over the best kinds of Scotch Kale, for instance, and taking off side shoots, strong ones, with a heel close to the older stem, planting them and watering them just as if they were strong young plants. Some of these might throw up a flower stalk, which was cut off, and fine, strong, producing plants were the result.

Cauliflowers.—Banked-up the forward *Cauliflowers* with dung from old Mushroom beds, and covered the ground with litter

to keep the moisture in. The plants are strong and looking as if they would form large fine heads, which we always regard as one of the finest sights in the garden. The second crop had the ground stirred among the plants, and a little water was given at the roots. A third piece was planted with young plants, previously pricked-out and hardened-off, raised with balls, and set in shallow trenches in rows 2 feet asunder. We waited until Saturday to do this work, as the atmosphere was more cloudy, and there was promise of showers, at least before long. Such plants would have had a poor chance without shading in the scorching sun of the previous days. Much of success in all departments depends on plants suffering as little as possible when changed from one position to another.

Beet.—The most forward is coming up well, and we had to net immediately, for the birds as usual were on the watch, and would have destroyed every seedling as soon as it showed the red leaves.

Asparagus.—Planted a piece in rows 2 feet apart, in ground well turned and prepared previously. We generally spread out the roots on the well-broken surface, turn over the soil on the roots from the spaces between, so that the ground forms a somewhat flat ridge above the roots, and then cover with 2 or 3 inches of old Mushroom-bed dung, or other rotten manure. Some grass mowings, thrown in a heap to heat and kill all Daisies, &c., are also a good mulching for Asparagus in summer. Except for protection, the manure given in winter is of little use, the help should be applied when the Asparagus is growing. A little sprinkling of salt twice during the summer is also useful. We allow the Asparagus generally to take its own way for two seasons. This season old and young plants came quite in a rush, and had we known it we would have planted a week earlier, when the plants were only a little above the ground; but as it is, though many plants were 6 inches in length and some longer, they never suffered after being planted and watered. This was chiefly owing to the roots being kept moist in a barrow, covered with a mat, and sprinkled so that no fibres were dried up by the sun. Such plants would not be suitable to send to long distances. In all stiff soils, and where thorough open drainage cannot be given under each bed, such surface-planting and surface-manuring are more important than trenching and manuring to great depths. The deep covering of the roots is one cause of failure, or comparative failure, in stiff soils. Without great preparation we could not rival the productions from the deep light soil of Battersea, but any one may have a few rows of Asparagus in his little garden without going to the wondrous outlay that some recommend in forming a bed. Even in stiff soils the roots will do well if kept near the surface and mulched on the surface.

Cucumbers and Rats.—Since those unwelcome visitors—rats, cut down our Kidney Beans we have seen little of them, and we somewhat prematurely hoped they had left us for a time; but the other night they made their way into our pit and gnawed a number of our best Cucumbers, and bit and mangled some scores of young ones, many not more than 3 or 4 inches long. We have failed to discover their retreat, and must, therefore, confine ourselves to trapping and poisoning them, though the latter is much against our will. The last corn stack built on the ground in our neighbourhood has been taken down and threshed, and now we expect to suffer from rats for some time. As yet the rats have contented themselves with the fruit of the Cucumber, and have not touched the shoots.

FRUIT GARDEN.

Strawberries.—Hoed the ground again among Strawberries, that every little weed might be killed if there were any, and also to keep the surface loose to let the rains in when they come. Will try to strew the ground with a little quicklime previously. Some Black Prince and others turned out of the houses have taken fresh vigour and produced some high-coloured good fruit out of doors. Those swelling and ripening under glass had a little superphosphate of lime placed on the surface of the pots to help them, just as much as could be conveniently taken between the thumb and the fingers. Every watering will wash the virtue to the roots. There is not much danger in giving an over-dose of this. It does very well mixed with water, 2 ozs. to the gallon, and comes in as a change between clear water, soot water, dung water, &c.

Orchard Houses.—Considerably, but not fully, thinned fruit on Peach trees, &c., which were of just a fit size for tarts. Observed a few appearances of the brown aphid, and syringed those trees with quassia water; the rest of the house in sunny afternoons we syringed with clear soot water and clear common water alternately. The Little Gem Pea in pots has produced

more abundantly than we expected at first, and the flavour is good. In the latest orchard house the syringing has as yet kept all in good condition. If the hot sunny weather should continue we will boil some soft soap, rather strong, make a paint with it and flowers of sulphur, and daub the open places of the wall with the paint. This, and frequent syringings with clear soot water not over-strong, are great preventives to the attacks of red spider and other insects. Plums, Cherries, Peaches, &c., are swelling well. Soft soap of itself is a great enemy to all the insect tribes, and may be used for syringing when the fruit is young, but never after Peaches are much larger than marbles, as after that it is apt to affect their downy skins. It is best applied thus:—Take 1 lb. of soft soap, boil it in a gallon or two gallons of water, and let it stand covered up in a pail for a number of hours. Then pour it off carefully into twenty or twenty-five gallons of pure soft water at about 90°, allowing any sediment to remain, and this liquid, though soapy and unctuous, will leave no residuum, unless on Peaches too far advanced, whilst it will prevent all insects from freely using their breathing powers. When insects appear in small places it is well to use the powdered tobacco of Mr. Pooley and others, and syringe with clear water next day. We have little faith in any killing and cleaning after plants become very much affected, the great point is to keep insects from coming.

Most of the Strawberry plants removed from under glass have been planted out, which saves watering them when standing about in pots, and secures a fair autumn crop without interfering at all with wondrous crops the following summer. What is planted out late can yield little or nothing this autumn, but there is no other plan that will beat these forced plants for yielding crops the following season. That first crop in the open air will be the best, that in the second year will not be so good, and the third crop will in general be very poor. When the plan is followed, only two crops should be taken after the plants have been turned out.

Proceeded with tying Peaches, thinning Grapes, &c., and kept the floors moist in these parching days. Prepared some dung beds for frames and Melons, making them at once, and putting earth in immediately, as previously stated, and will plant in the beginning of the week, when the earth will be sufficiently warmed. Washed a Peach wall with soft soap water, as green fly had begun to make its appearance. We prefer made soap water to that from the washhouse or laundry. Could we get the latter we should prefer it for watering at the roots. When strong shoots now appear on Peaches, Apricots, &c., stopping-back may be useful for causing two or three shoots to fill up a vacancy, and the sooner the stoppage takes place the better will these secondary growths be ripened. If only one shoot is wanted, the strong shoot should be stopped, and after the secondaries have grown a little one of them should be selected. Extra strong shoots are to be avoided in all such fruit trees, as they rob the weaker shoots of their due portion of matured juices, and grow too vigorously themselves, to be so ripened in our climate as to prove fruitful. The first proceeding of the cultivator should, therefore, be to remove, or early to stop all such over-vigorous shoots, in order that the strength of the tree may be equalised throughout. Our aim should be to obtain wood not over-strong, nor very weak; but even a weak, well-ripened shoot is preferable to a very vigorous one imperfectly matured.

ORNAMENTAL DEPARTMENT.

Heartsease have had a favourable time in the sunny weather. Viola cornuta seems almost as sweet as, and to us is more pleasant than the Russian Violet. Tulips will now be in their glory, and the fine florists' kinds should be protected at least from heavy showers and hail, which may yet come, as on the 7th we had ice the thickness of a pennypiece, though the day before and the day after were excessively warm. On Saturday morning we had rumblings of thunder in the distance, and clouds less or more all day, and we uncovered all our bedding plants, expecting the rain that did not come. The wind being nearly due south we left all uncovered for the night, resolving to roughly cover in the morning, if no rain came during the night, as they were becoming too dry to stand a bright sun long before they were watered, which we were unwilling to do until we saw what would come to us from the clouds, the best of all watering. Much time has been taken up in potting Ferns and other plants intended for the open ground, the greenhouse, and other houses, so as to bring them on rapidly, the contest beneath every foot of glass now being, whether that foot shall be devoted to the eatable or the ornamental, or to both. For instance, no sooner do we plant Cucumbers or Melons, than

the backs and fronts of pits and frames are generally devoted to other young plants, which are just removed as the room is wanted—a way to make the most of the glass, but which involves much time and labour, and a considerable amount of contrivance, so that the plants shall not suffer from the change.

Watering required much attention, not so much as to quantity given as to discretion in giving it. To newly potted plants, and even those partly or wholly established, it is of little use to flood the roots, when these roots are already surrounded with earth quite moist enough for them to absorb moisture freely. In such cases a damp atmosphere, from damping the floor, stage, and even in many cases syringing the foliage gently, and shading in the brightest sun, will be better appreciated by the plants than deluging their roots, already damp enough, with water. When obliged to water, the water should flow over the surface of the pot, and not be poured into a hole close to the stem of the plant, one of the most effectual means for killing outright many plants that are at all sensitive.—R. F.

COVENT GARDEN MARKET.—MAY 13.

THERE has been very little alteration here. A good attendance both of growers and dealers keeps the demand and supply about balanced. Forced fruit is particularly good, and foreign produce arrives in fair condition. Good old Potatoes command a ready sale at former prices. The quotations for new ones are declining.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	3	0	5	0	Melons each	8	0	15	0
Apricots doz.	2	0	4	0	Nectarines doz.	0	0	0	0
Cherries lb.	3	0	5	0	Oranges 100	3	0	7	0
Chestnuts bush.	0	0	0	0	Peaches doz.	24	0	42	0
Currents ½ sieve	0	0	0	0	Pears (dessert) .. doz.	0	0	0	0
Black do.	0	0	0	0	Pine Apples lb.	8	0	10	0
Figs doz.	12	0	18	0	Plums ½ sieve	0	0	0	0
Filberts lb.	1	0	0	0	Quinces doz.	0	0	0	0
Cobs lb.	0	2	1	0	Raspberries lb.	0	0	0	0
Gooseberries quart	0	6	1	0	Strawberries .. per lb.	4	0	10	0
Grapes, Hothouse. lb.	8	0	12	0	Walnuts bush.	10	0	15	0
Lemons 100	8	0	12	0	do. per 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	3	0	4	0	Leeks bunch	0	3	6	0
Asparagus 100	3	0	8	0	Lettuce per score	1	0	1	6
Beans, Kidney 100	1	6	0	0	Mushrooms pottle	0	9	1	6
Beet, Red doz.	2	0	3	0	Must.& Cress, punnet	0	2	6	0
Broccoli bundle	0	9	1	0	Onions per bushel	3	0	5	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsley per sieve	3	0	4	0
Cabbage doz.	1	0	1	6	Parsnips doz.	0	9	1	0
Capsicums 100	0	0	0	0	Potatoes bushel	4	6	5	6
Carrots bunch	1	0	0	0	do. Kidney do.	4	0	6	0
Cauliflower doz.	3	0	8	0	Radishes doz. bunches	0	6	0	9
Celery bundle	1	6	2	0	Rhubarb bundle	0	4	1	0
Cucumbers each	0	6	1	0	Savoy doz.	0	0	0	0
Endive doz.	1	0	0	0	Sea-kale basket	0	0	0	0
Fennel bunch	0	3	0	0	Shallots lb.	0	8	0	9
Garlic lb.	0	8	0	0	Spinach bushel	2	0	3	0
Herbs bunch	0	8	0	0	Tomatoes per doz.	3	0	4	0
Horseradish .. bundle	3	0	5	0	Turnips bunch	0	4	0	6

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

BOOKS (*J. Stead*).—A Supplement to the "Cottage Gardeners' Dictionary" is now printing.

YOUNG MELONS YELLOW AND DROPPING (*J. T. Fike*).—The cause is generally twofold—First, when the soil is too rich and the plants too vigorous, they must waste a little of their surplus strength before the fruit can appropriate it rather than the foliage. The second cause is want of strength in the plant from the fruit being allowed to set too soon. The best remedy for that is to treat the plants as lately detailed in "Doings of the Last Week."

THOMSON'S STYPTIC FOR BURNING (*A. Subserthier*).—The styptic should be applied after the bud is inserted, putting it on the cuts made in the stock, but not over the bud itself. This should be done before the bud is bound up.

CAUSING STEAM IN A VINERY (*T. B.*).—It is always very undesirable, and a great waste of fuel, to cause water to boil in hot-water pipes, and it is a dangerous and bad practice to pour water in a vinery on pipes thus hot. It is safest to use evaporating pans on the pipes, and to sprinkle the floor and the stages to secure atmospheric moisture. The danger of steaming a house from watering pipes thus hot will be in proportion to the nearness of the pipes to the foliage. In a lofty house, when the

plants are a long way from the pipes, the danger will be less. Still the practice is an unsafe one. The vapour that escapes from a small cistern in a house will do no harm. When this matter was referred to lately it was in the case of a correspondent who had a large tank the length of the house. When the Grapes are ripe it would be as well to cover the cistern.

GARDEN PLANS (*Brought-up a Ploughboy*).—Except for a croquet ground we do not admire the arrangement of your lawn and borders. The large circular bed will look very well, only you will have rather much white, having out of the four bands one of *Cineraria* and one of *Cerastium*. A dwarf yellow plant next the gravel would make more variety. Your border round the lawn will do very well; only as it is narrow and will be seen from both sides, it would look as well to have both sides alike—say, plant the centre all round with plants of scarlet *Pelargonium* and yellow *Calceolaria* of the same height, and the two sides with *Lobelia* and *Cerastium* mixed. The broad borders, 4. we would ribbon, keeping the tallest plants next the wall, and for uniformity we would plant the edging the same as the narrow borders. (*Harmony*).—We think a centre and five bands round would be enough for your bed, and we would plant thus, beginning at the centre—*Stella Pelargonium*, *Centauria argentea*, *Amaranthus melancholicus ruber*, *Calceolaria Aurea floribunda*, blue *Lobelia*, *Cerastium*. We break our rule in giving you this advice, as our part is to improve, not to plant.

ORCHARD-HOUSE PLUM TREE ATTACKED BY INSECTS (*E. A. S.*).—From your description we do not know whether you have the brown scale or the brown aphid, *Aphis persica*; but in either case washing with quassia water or soft soap water are effective remedies. If the insect is the brown aphid lose no time about it, as one of the clusters you speak of will soon fill a house if let alone. The largest are very full of blackish yellow matter, and most of these if squeezed will show strings of young ones like ropes of onions. Some years ago we suffered from them, and that has made us look sharply after them ever since. It is safest to keep them away.

SCALE ON PEACH TREES (*W. M.*).—The brown scale on the Peach shoots you must wash off with a hair brush, and use soft-soap water, two ounces to the gallon if the Peaches are still small, but weaker if larger. We cleared a house once by syringing frequently with quassia water, a pound boiled in four quarts of water, and then that increased to five gallons. You might wash the stems alone with quassia water as strong as a pound to the gallon, but that would be too strong to syringe with.

WOOLICE IN CUCUMBER BED (*T. S.*).—All old gardens are more or less infested with woodlice, especially where there are frames and pits and much dung heat. The drier the manure used the more likely will the woodlice be to appear. They like a dry retreat, and from that fact, as often stated, may be derived a lesson as to how to destroy them. If your bed is very much infested water it well, except a few inches in width at back and front, and cover that dry part with a little dry hay. Provide yourself with boiling water and a small-rosed watering pot, and gently turn over the hay in the morning, and sprinkle the woodlice with the water as you proceed. If that is not practicable, take a number of the smallest pots, place a piece of boiled potato in the bottom, and a little dry hay or moss over it, lay the pots on their sides, take them out in the morning, and throw the intruders into hot water, or do as you think best. Woodlice are quite as fond of Melons as Cucumbers.

WOOLICE (*Q. B.*).—Woodlice devour the stems, leaves, and young growths of many plants. As to the means of destroying them see the preceding answer and several of our recent numbers.

STRAWBERRY PLANTS BARREN (*A. B.*).—In your case, if you layered all the plants from fruiting plants, we would attribute so much barrenness to excessive vigour. In such a case we would put considerable faith in the opinion of the gardener, and wait and see what next year would do; but were we in your case and short of ground, we would layer fresh runners and do away with the barren plants. Most likely your plants were too vigorous to be well ripened last autumn.

GRAPE SPOTTED (*E. C.*).—We think the cause of spot on the berries is removing the covering of the outside border too soon, and having too much moisture in the atmosphere of the house from watering Ferns, &c. The reason that the Black Hamburgh suffers whilst the Black Muscat of Alexandria, or Muscat Hamburgh, grafted on it escapes, we attribute to the latter looking after itself and taking the most of the nourishment. It is singular how a graft often escapes the evils that annoy the parent stock, even to making an unhealthy stock healthy.

CYCLAMENS FROM ITALY (*G. H.*).—The Cyclamens found in the neighbourhood of Sorrentum at the end of April, and bright pink, are undoubtedly *C. repandum*, the flowers being brighter in colour than those of *C. neapolitanum*, which flowers in autumn after *C. europaeum*. *C. repandum* is sometimes called *neapolitanum*, *hederaefolium*, and *astivum*. It is quite hardy, succeeding in warm ledges that are sheltered from sun in summer during the hottest part of the day. Cyclamens succeed in a compost of turfy loam, leaf mould, and pieces of grit from the size of a pea up to that of a walnut. The corns should be planted as soon as they arrive, and so that the crown will be covered from 1½ to 2 inches deep. The drainage must be good. If you wish to grow them in pots provide good drainage, and, using the above compost, pot so that the crown will be covered with about an inch of soil. Plunge the pots in a rather shady border out of doors, and do not water but plunge them to the ribs in rough ashes, the pots being set on a bed of loose open rubble. A pot three times the diameter of the corns will be quite large enough. In autumn the pots may be moved to a cold frame, or be left where they are. If placed in a frame they should be plunged, and beneath them should be open rubble, for wet is very injurious to Cyclamens; and not less so is the deprivation of air, of which they cannot have too much when the weather is mild. The soil should be kept moist, but not saturated, otherwise the plants will perish. The best time to repot them is when they are beginning to grow. They may be kept near the glass in a greenhouse, and in the coldest and most airy part, keeping them rather dry in winter. When in growth the soil, of course, ought to be watered so as to maintain them in a healthy state. After the plants have flowered plunge the pots out-doors in a position shaded from powerful sun, and remove them to the greenhouse or frame before severe weather. *C. repandum* is best and most successfully grown on rockwork; it does not succeed well in pots.

CUCUMBERS BITTER (*H. Hopetoun*).—We are not aware that there is any mode of preventing bitterness in Cucumbers, except by growing them

quickly. Cut them when of less size, and give more heat and moisture. The more quickly they are grown the more crisp and less bitter they will be. The stalk end being bitter and the other portion sweet, shows the fruits to be slowly grown and old. Large Cucumbers, unless quickly grown and cut young, are seldom good. The kind may have something to do with the bitterness.

SCABINO ROOKS (E. C.).—We know a place where there are two rookeries close to the garden, and the rooks do not interfere with the crops in the kitchen garden. During twenty years' experience in places where rooks abounded we never had the least trouble or anxiety on their account. So far as we know they do not eat fruit; they do not care for green Peas. We think the devourers of your fruit must be jays, which seldom show themselves during the day, and you say the mischief is done during the early morning hours. Were it done by rooks these would visit you during the day. Your Peas, we think, must have been taken by wood pigeons as well as jays. We would advise you to make sure that the rooks do the mischief before you wage war against them. It would be easy to detect the thieves by rising at dawn, and watching for a few consecutive days. If rooks are the perpetrators, then we would shoot one or two and hang them on a pole as a warning to the rest. It will hardly be necessary to repeat this, only you may drive away birds that you may by-and-by regret.

VARIATED PANSIES (T. L.).—Variegated Pansies are not very unusual, but are not common. The variegation of the plants have been seen was either not permanent or not sufficiently well marked to render them of value as variegated plants. In those we have seen the markings were chiefly yellow.

REMOVING STRAWBERRY RUNNERS (Idem).—Strawberry plants in flower may have the runners removed if you do not require runners for a new plantation, but if you do, the first runners will be best and should be left.

CULTURE OF IXORAS (One Who Loves Flowers).—Ixoras succeed in a compost of two-thirds sandy fibrous peat torn in pieces by the hand, and one-third fibrous loam from rotted turves, adding about one-sixth part of silver sand and charcoal in pieces from the size of a hazel nut down to that of a pea, the whole being well mixed. The compost should be made rather fine, but not sifted. Good drainage is essential. Their proper time of rest is winter, during which they should be kept dry, but not so much so as to cause the foliage to flag. From September to February the temperature may be 60° at night, and from 65° to 70° by day, and 55° at night in severe weather will not be too low. From February onwards the temperature should be slightly increased, so as to have it 65° at night by May, and from 70° to 75° by day without sun, and from 80° to 90° with sun and abundance of air. These temperatures may be continued until September, when they should be allowed to decline.

EPACRIS AFTER FLOWERING (Idem).—It is not right to start Epacris in a stove after flowering; they should have what pruning is required, and be kept in a cool, light, and airy house or pit, and rather moist so as to encourage free growth.

REMOVING PROTECTION FROM FRUIT TREES (J. S. Gordon).—The protection for Plums and Pears will hardly be required after April, as the trees will be in leaf. The fruit is quite as liable to injury from frost as the bloom, if not more so; the protection, therefore, should be kept in readiness for times of severe frost, when it should be employed, and then only. We cannot name plants from leaves.

USING AMMONIACAL LIQUOR IN EVAPORATING TROUGHS (J. B. E.).—Not having tried it for this purpose, we cannot recommend ammoniacal liquor. We think it would answer if diluted with six times its volume of water. We keep our evaporating troughs full of liquid manure made by dissolving 4 lbs. of guano in thirty gallons of water.

HANGING OF LATE GRAPES (A Reader).—As you have sent us no less than three letters we will take time to consider them.

APPLYING GUANO TO A LAWN (H. K.).—Guano should be sown broadcast over the lawn during showery weather so that it may be washed in, for if spread over the grass in dry weather it will brown it. The guano should be sifted through a fine sieve before being distributed. Two cwt. per acre will be a good dressing. Superphosphate of lime may be applied in the same way.

PROPAGATING PRUNUS SINENSIS (W. S.).—This Prunus is readily increased by cuttings. Cuttings of the growing shoots may be taken off after they become hard, inserted in sandy loam, and placed in a hotbed; or cuttings of the ripe wood may be put in during the autumn in sandy soil in a sheltered situation, the cuttings being taken off with a small beel of the preceding year's wood. They will root with certainty and be good plants in twelve months.

VINE LEAVES MILDEWED (J. B.).—The leaf was spotted with mildew. Dust with flowers of sulphur immediately.

CUSTARD APPLE CULTURE (Constant Reader).—For the successful culture of this the house must be lofty, as it attains a height of 15 feet and more. A stove temperature is necessary, and it would be well if the plant had the benefit of a bottom heat of from 75° to 80°. The compost

may consist of two-thirds turf taken from an old pasture where the soil is a good sandy loam, 14 to 2 inches of the upper surface being pared off, chopped in pieces about an inch square; to this add, in equal proportions, one-third of well-rotted cow dung not less than a year old, and leaf mould, and one-sixth of silver or river sand. Good drainage should be given, and the plant ought to be potted rather firmly, giving a good watering, and plunging it in a hotbed. The potting may take place in February, and the plant should have every encouragement to make a good growth by affording it an abundant supply of moisture and increased heat, which should be maintained until October, the plant being then allowed rest by giving a lower temperature and drier soil. A temperature of 80° at night, and from 65° to 70° by day, will be sufficient during November, December, and January, and increase it during February and March so as to be 70° at night by the middle of May, and from 80° to 95° by day with plenty of air. We are not aware that the Cherimoyer has been fruited in this country, and we do not think plants from seed are likely to fruit in a reasonable time. We shall be obliged for particulars as to the culture of tropical fruits in this country, as it is a subject that must, ere long, have attention paid to it.

PEA LEAVES EATEN (G. W.).—The depredator is *Cerculio lineatus*, or pea weevil. The only remedy is to spread a sheet by the side of the rows in the evening, and shake the plants. The weevil retires into the soil during the day, we believe, and comes forth at dusk to feed.

FLOWER GARDEN PLANTING (Man of Kent).—With every disposition to oblige, we must decline to plant groups of beds. Tell us how you propose to plant and we will criticise and point out what we think would be better, if we can. Were we to do as you propose, we should want a staff on purpose, especially for the spring months. We will keep your plan and letter so that we can refer to them when you give us your mode of planting. Your plan is very simple. It would be simpler still if you had no clump in the middle of the lawn, and regular parallelograms all round, with the ends swept out by a curve corresponding with that of a circle between them. Then if you had anything in the centre, a cross or a star would come in better than an oval.

VARIOUS (Idem).—Sow Primulas and Cinerarias to bloom next spring as soon as you can. Pansies sown now will bloom in the autumn and spring. Alyssum, of the perennial kinds for spring blooming, should be struck from cuttings after blooming. Auriculas, Polyanthus, &c., should be divided after blooming, or sow the seeds now. All spring-flowering plants may be divided or struck from cuttings as soon as they finish blooming.

GREEN VITRIOL FOR DESTROYING WEEDS ON WALKS (M. L.).—A pint to four gallons is sufficiently strong. It should be mixed in a well-painted bucket, and applied to the walks with a fine-rosed watering pot, a sprinkling being sufficient. It should be kept from Box or grass edgings, and should be used in dry weather only. In applying it, walk backwards so as not to tread upon the newly-wetted walk, as doing so would be destructive to the boots. It is destructive to everything it touches, so that great care is necessary to prevent splashing, and to keep it only where it is wanted.—G. A.

NAMES OF PLANTS (Subscriber, Liverpool).—We cannot identify a plant from a leaf. (D. Halls).—The same answer applies to you. (A Constant Subscriber).—1, *Anemone nemorosa*; 2, *Muscari racemosum*; 3, *Corydalis bulbosa*; 4, *Dielytra formosa*. (J. S. E.).—*Philadelphus hirsutus*. There is no work treating exclusively on *Selaginellas*. (A. Storrie).—*Libertia grandiflora*. (A. B.).—1, *Erica lachneifolia*, var.; 2, *E. rupestris*; 3, *E. perspicua*; 4, *E. radiata*. (J. H.).—*Sparmannia africana*. (C. H. H.).—1, *Selaginella Galeotti*; 2, *S. Kraussiana*; 4, *S. Martensii*. (Adam).—1, *Selaginella Galeotti*; 2, *Gymnogramma calomelanos*; 3, *Adiantum cuneatum*; 4, *A. affine*; 5, *Gymnogramma ochracea*. (Rolfé).—1, *Cheilanthes hirta*; 3, *Myrsiphyllum asparagoides*. (J. Englefield).—*Selaginella cuspidata*. (A. W. A.).—1 and 2, *Acacia* leaves are quite indeterminate; 3, *Aspidium angulare*. (H. W. E.).—*Staphylea pinnata*. (Elms).—1, *Alyssum saxatile*; 2, *Arabis albidia*; 3, *Andrietta deltoidea*. (E. J. R.).—*Ionopodium scutellaria*. (Mr. Foster).—*Akebia quinata*; it is easily propagated by cuttings of the stem and roots. (F. F.).—Apparently *Sambucus nigra* fol. var. of which there are several in cultivation. (W. Friers).—Not distinguishable from a single leaf. Send a part of the stem. (Ireland).—1, *Forsthyia suspensa*; 2, *Doronicum caucasicum*; 3, *Siphocampylus coccineus*. (E. W.).—2, *Andromeda polifolia*; 3, *Ledum palustre latifolium*; 4, *Leucothoe axillaris*. (A. B.).—1, Double-flowered *Spirea*; 2, *Cytisus supinus*; 3, *Lonicera tatarica*; 4, *Garden Amygdalus*. (Mary).—1, *Arabis albidia*; 2, *Iberis divaricata*. (Spring Flower).—*Lithospermum prostratum*. (A. B.).—1, *Strobilanthes grandiflora*; 3, *Epimedium alpinum*; 4, *Gentiana alpina*. (Subscriber).—We cannot name plants from their leaves. (W. F. R.).—*Alyssum saxatile*. (A. R. C.).—*Ribes sanguineum*; *Prunus japonica flore-pleno*. (W. C.).—*Calcocaria violacea*. (A Subscriber, Glenhaon).—1, *Corydalis lutea*; 2, *Lonicera tatarica*; 3, *Saxifraga hirta*; 4, *Daphne pontica*; 5, *Leucojum vernum* (Spring Snowflake). (G. S.).—*Cytisus* (Genista) *canariensis*. (T. R.).—*Lonicera tatarica*, not wild. (S. H.).—*Prunus* (Cerasus) *padus*. (W. Tyrer).—*Spirea levigata*. (Julia).—*Ranunculus ficaria*. (A. B.).—1, *Nierembergia filiculis*; 2, *Ranunculus acrifolius flore-pleno*; 3, *Epimedium alpinum*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending May 12th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 6	30.124	30.036	56	27	54	53	S.E.	.00	Dull and cloudy; fine; clear and fine at night.
Thurs. 7	29.977	29.804	66	28	52	51	S.E.	.00	Hazy; clear and very fine; fine at night.
Fri. ... 8	29.849	29.711	79	44	53	50	S.E.	.00	Fine; clear and fine; very fine; clear.
Sat. ... 9	29.726	29.708	68	40	55	52	S.W.	.05	Overcast; cloudy; densely overcast; rain.
Sun... 10	29.755	29.722	67	35	55	53	S.W.	.09	Overcast; rain, dull and cloudy; clear and fine
Mon... 11	29.815	29.756	66	38	55	53	S.	.00	Clear and fine; overcast; clear and fine.
Tues. ... 12	29.920	29.791	69	35	55	53	S.E.	.00	Cloudy; densely overcast; very fine, clear.
Mean	29.879	29.790	67.29	35.29	54.14	52.14	..	0.15	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

PRESENTATION OF TESTIMONIAL TO
MR. HEWITT.

On the 12th instant a few of the subscribers to this testimonial dined together at the Public Rooms, Hull, to present it to Mr. Hewitt, and with it an accompanying address. The sum subscribed was just over £400, and it was presented to Mr. Hewitt in the form of a gold chronometer, having on its inner case a suitable inscription, and the balance was in a purse of sovereigns. The chair was occupied by Mr. JESSOP; and the presentation was made by Mr. FLETCHER, one of the Committee, who spoke as follows:—

MR. CHAIRMAN AND GENTLEMEN.—The duty you have done me the honour of placing in my hands I undertake with mingled feelings of pleasure and pain. Whilst, on the one hand, I fully appreciate the honour, I sincerely regret on the other the circumstances which conferred it on me in preference to another gentleman, in every way more qualified than myself. Mr. Jessop, as the originator and principal promoter of the testimonial, the presentation of which has occasioned our present meeting, had the first claim to the performance of my present office, and would, doubtless, have fulfilled the requirements of it with greater efficiency than I can hope to do. We must all deeply sympathise with him in the affliction which has incapacitated him from taking his proper share in these proceedings, and under these circumstances I must ask your indulgence for the manner in which I may acquit myself in the duties I have to perform. Most persons have some favourite pursuit—some hobby, if you please, to which they devote their leisure from the more arduous task which their business, calling, or profession imposes upon them. It is only natural that such should be the case. The mind requires some object on which to unbend itself after the more serious toils inseparable from daily cares, and among the pursuits of this nature none are less exceptional than the effort of improving the quality of domestic animals for the purpose of exhibiting to the public what may be achieved in this direction. It is, moreover, as useful and innocent as it is interesting. It does not admit of the ruinous system of gambling connected with some other pursuits. There was a time when fowls were bred for the purpose of fighting. The preparation of them for exhibiting precludes this use, or rather abuse, of this interesting portion of animated nature. How superior is the presentation of them in their most perfect form and beauty of plumage, to a pursuit which brutalises and degrades the mind and character, need not to be pointed out; it is self-evident. Hence it is a pursuit in which all who have a taste, whether engaged in business or profession, not excluding that of the clerical office, may join; and it is not improbably owing to its unexceptionable character, that it has achieved so great successes. The extent to which poultry shows have advanced is evident to those who remember what they were when first instituted. For instance, the first pen of Game I exhibited, and which gained the first prize, were of different colours—a circumstance which now would amount to disqualification. A corresponding improvement has likewise taken place in their value. In those early days a few shillings or a sovereign was considered an extra price, whereas now as much as £20 or £30 are paid for choice birds. From the nature and object of these exhibitions, the degree in which their success is dependent on the uprightness and intelligence of those whose duty it is to decide on the respective merits of the objects exhibited, and on the confidence his character inspires, must be evident. When, too, the office of judge is filled by a gentleman who unites to a careful study of the subject a judicious and kindly exercise of its functions, contributors derive an important benefit from his hints and suggestions relative to points where improvement should be aimed at. Being thus in advance of exhibitors, he can render them valuable assistance in their efforts to improve the breed of those birds to which their attention is more particularly devoted. The injury that would, on the other hand, be inflicted by an incompetent person, one wanting experience, or devoid of high moral principle, would be incalculable; such an individual ought not to attempt such a duty, or, if he attempt it, ought not to be allowed to exercise it. In Mr. Hewitt we have not only a gentleman combining the necessary qualifications for this office in an eminent degree, but one who in a sense may be regarded as the parent of poultry exhibitions; and the estimate in which he is universally held is a sufficient evidence of the unexceptionable mode in which he has exercised the power entrusted to him, and I feel satisfied that the encomiums passed on him in the address I am about to read will be considered by those I have the honour to address to be well merited. For my own part I most fully and cordially endorse the sentiments expressed in it. But it is time, sir, that I should proceed to the more important part of my duty, and with your permission will read the address which accompanies the testimonial to our esteemed guest.

Address presented to EDWARD HEWITT, Esq., of Eden Cottage, Sparkbrook, Birmingham, in recognition of his valuable services in connection with Poultry Shows.

"DEAR SIR,—The periodical shows for the exhibition of prize poultry may now be regarded as one of the permanent institutions of

the country; and their establishment is justified by the impetus which has thereby been given to the improvement of this department of animal culture—an improvement beyond what is known, save to those practically interested in the matter. Under their auspices the breeding of fowls has become a science. New kinds have been imported, new varieties have been produced, and the value of choice birds has been greatly enhanced. Feeling how much this success is due to your invaluable and unwearied labours, the undersigned hereby desire respectfully to tender to you their sincere acknowledgment of the obligations under which your services have laid them in the promotion of this object. They further request the favour of your acceptance of the accompanying watch, together with a purse, contributed by a large proportion of those, who, as exhibitors or otherwise, are interested in the subject; and they offer it, not as an attempt at the remuneration of your self-sacrificing exertions, but as a slight TESTIMONIAL of the sense they entertain of the uniformly upright manner in which you have exercised the functions of judge in the numerous exhibitions all over the country where you have filled that office, and the unvarying impartiality which has characterised your decisions.

"They are fully sensible that your greatest satisfaction will arise from your own consciousness of the rectitude of your motives; they, nevertheless, feel that it may not be unacceptable to you to know the appreciation in which your conduct is held by those with whose interests you have been so largely entrusted; they, therefore, tender to you this small mark of their esteem for the honourable course which has ever marked your connection with these exhibitions.

"Accept, dear Sir, the sincere congratulations of those who hereby testify their regard, together with their fervent wishes that you may long be spared to continue your useful labours, and that, under an All-beneficent Providence, your advancing years may be attended with increasing happiness."

And now, Mr. Hewitt, it is my pleasing duty to present to you, in the name of those who have been active in the matter, this purse and watch, which are intended as a tangible expression of the kind sentiments and good will to you, and the address I have just read, in which those sentiments are more fully described. I flatter myself, sir, that fully appreciating the intentions of your friends, these evidences of their esteem cannot be other than cheering to you in the labours still in store for you in the cause to which you have been so long devoted. It is the hope of those to whose exertions these testimonials are due, that, in the words of the address, you may long be spared to enjoy the esteem of your friends, and labour in the cause which owes so much to your exertions.

Mr. HEWITT then returned thanks, expressing very forcibly his feelings upon the occasion. He said that this testimonial had attained dimensions which he had never anticipated, and that was no doubt attributable to the influence which the press had exercised. So large was the sum that at one time he was in doubt how to appropriate it; for, having retired some years ago, and being independent of business, he did not require it for any needful purpose. He had received many letters suggesting various modes in which it might be invested. One had proposed a silver candelabrum; but he was fearful that on some occasion when he was absent from Birmingham, judging at some far-distant poultry show, he might on his return find the candelabrum had been removed into Birmingham and converted into some other form. Another proposed a diamond ring; but as he had no weakness in that direction, he declined adopting that suggestion. His own feeling was to convert it into something more permanent and useful than either; and as his present residence, which thirty-five years ago was far in the country, is now absorbed in the town of Birmingham, he had determined to leave it and purchase with this money a piece of ground ten or twelve miles farther in the country, and there to build a house where he would always have around him the evidences of this high mark of the respect which his numerous friends have exhibited towards him.

MR. G. W. JOHNSON then, at the request of the Chairman, expressed the great pleasure he felt upon the present occasion. The list of subscribers was evidence of the high estimation in which Mr. Hewitt's services were held, and Mr. Johnson bore testimony to the same. It so happened that fifteen years since, in this very month in the year 1853, he saw for the first time the awards of Mr. Hewitt at Exeter, and in the July of the same year at the metropolitan show, and then, and ever since, he had seen the same skill and the same uncompromising honesty in Mr. Hewitt's decisions. The press, which Mr. Hewitt had thanked, had but one object in view—the establishment of truth, and in attaining that they had to rely upon the information and aid afforded by such gentlemen as were now present.

MR. TEGETMEIER and the CHAIRMAN then briefly addressed the meeting, after which it separated.

GAME FOWLS.

I READ with considerable interest the article by Mr. Trevor Dickens ("NEWMARKET"), in your number of April 30th, and I readily concur with him in his "dislike of the half-Malay-looking, large, drooping-tailed Game cocks and hens, &c.;" and had he merely expressed himself in this way in his former remarks which I felt called upon to condemn, instead of asserting that such birds were "of a quiet and tame disposition," my public appearance in your paper would have been avoided.

My friend (I discuss the matter with the most friendly feeling), displays a strong propensity for jumping to extremes, presuming that because I dislike "fan-tails and lowered wings," I must be an advocate of "drooping tails and wings carried half across the stern," and never for a moment considers it possible that I may fancy the stamp of birds belonging to the celebrated breeders of which he takes notice, and whose strains he so justly holds in the highest estimation. These birds he says, "are fit both to fight and to exhibit, whatever form of tail they may present." Now, I venture to assume, that they are neither "fan nor drooping-tailed;" neither do they carry their wings "half across their sterns like Geese;" nor do they cover their thighs therewith, but occupy a medium position in all these respects, and hence we come to the only possible conclusion which must be apparent to all—viz., that the tails and wings have nothing at all to do with the fighting qualifications.

I am next reminded, that "exhibition birds are rather of a different type from real fighting birds in many strains." Supposing this to be granted, it is not necessarily the case, which Mr. Dickens himself admits when he says that those "birds he considers perfection are fit both to fight and to exhibit." I never saw a real cock fight, detesting as I do such brutal practices, but the principal points which I strive to attain in my exhibition birds would, I doubt not, be of good service in the "pit." For example: A good square front; strong, curved, and firmly-set mandible; short, close, hard feathers; and thick muscular thighs of moderate length and well displayed, would be viewed with gratification both by exhibitors and cockers. A cock of this stamp has not the same Hamburg display of tail as the soft-feathered birds, which tends greatly to its advantage, as it is quite natural to suppose a Game fowl should not be encumbered with plumage.

While Mr. Dickens asserts that I made an incorrect statement in hinting that he advocated "drooping wings," he makes a too conspicuous attempt to get the wings put in better position by raising them somewhat above the mire and causing them now only to shield the "upper part" of the thighs; whereas in his former article they were required to "shield the thighs." By another week I trust my friend will have given them another "hitch," and allowed them to spring into their proper place—viz., lying closely pressed against the sides of the body with their extremities meeting immediately under the root of the tail. In any other direction the bird is prevented from displaying that handsome wedge shape which is one of its most characteristic beauties.

Mr. Dickens further remarks that my birds must be "slow," as, "if they had been quick good birds, they would have killed each other in a few minutes;" but Mr. Dickens is somewhat like his strain in this respect—a little too fast, for he does not take time to inquire after the age of the birds before he fixes their doom. I was not aware that cockerels unspurred could do such dreadful execution in so short a time, and fondly hope, with me at least, this will never be the case. Mine are "mere exhibition birds," and all I do to maintain their fighting qualities is to adhere to the careful annual introduction of fresh blood.

With regard to "using a stick or weapon of defence," Mr. Brown is quite qualified to defend this statement, and I doubt not, if it can possibly serve any good end, he will gladly do so. Of course Mr. Dickens's favourite "game birds that are not our exhibition birds in general, but a smaller bird altogether," will have a less telling effect upon that gentleman's hand than Mr. Brown's two-year-old exhibition bird.

Before closing allow me to express my hope that Mr. Dickens is now convinced of the impropriety of advocating in so widely circulated a paper as "our Journal" the introduction of a stamp of fowls to which he would never give a prize in the exhibition pen, the more especially as we have got him to admit the existence of birds "fit both to fight and to exhibit." These are the birds we should attempt to spread over the country, and at the same time use our utmost endeavour to dispel from our midst the "rubbish," which can only bring disgrace on the majestic birds that proudly bear and maintain the name of "Game."—H. GOODALL, *Sion House, Kirkcaldy.*

EXCESS OF EGGS.

I HAVE a two-year-old Rouen Duck that last Sunday laid three eggs before eight o'clock in the morning, on Monday one, on Wednesday two, one of which weighed 6 ozs., and on Friday two more. All the above were properly shelled. I have only two Ducks and a drake, so cannot be mistaken. On the

Sunday there were four eggs. Two years ago I had a Duck of the same breed that laid eggs in the same number of days, never missing during the time.

Should you deem fit to insert the enclosed, you are at liberty to do so.—CHARLES SEDGWICK, *Ryddesden Hall, Keighley.*

[The money for the fowls you sold two years ago can be recovered by suing the purchaser in the County Court.]

HULL AND EAST RIDING POULTRY EXHIBITION.

This was held in the Public Rooms, Jarratt Street, Hull, on the 12th and 13th inst.

In addition to the money prizes, there were three silver cups given by the Society for the best pens of Game: a silver cup, by J. Easton, Esq., for the best pen of Bantams; and a silver cup, given by Mr. W. E. Easton, for the best pen of Pigeons. A sixth silver cup, was given by Thomas Reynoldson, Esq., for the best Lop-eared Rabbit; and a bust of Vesta, with pedestal, in Parian marble, was given by E. J. Davis, Esq., as an extra prize in the Spanish, Dorking, and Cochins-China classes.

The following is the prize list:—

GAME (Black-breasted, or other Reds).—Cup and Third, J. Fletcher; Stoneclough, near Manchester (Black Reds). Second, S. Matthew, Chilton (Brown Reds). Highly Commended, H. M. Julian, Hull (Reds); J. H. Wilson, St. Bees (Black Reds); C. Chaloner, Steeley.

GAME (Any other variety).—Cup, J. Fletcher. Second, W. Boyes, Beverley (Duckwings). Third, H. M. Julian (Duckwings). Highly Commended, H. M. Julian; S. Matthew.

GAME COCK (Any variety).—Cup, H. M. Julian. Second, J. Fletcher. Third, W. H. Wheeler (Black Red). Highly Commended, J. Fletcher; S. Matthew (Black Red); G. E. Smith, Scarborough; R. Woods, Osberton (Black Red). Commended, Church & Houlding, Nantwich (Brown Red); J. Brough, Carlisle; J. Whitfield, Hull.

SPANISH.—First, H. Beldon, Bingley. Second, J. R. Rodbard, Wington, near Bristol. Highly Commended, H. Beldon. Commended, Burch and Boulter, Sheffield; J. Thresh, Bradford.

DORKINGS (Any variety).—First, W. H. Robson, Louth, Lincolnshire (Coloured). Second, Mrs. M. Seamons, Hartwell, Aylesbury. Highly Commended, T. Morris, Uxley; Mrs. E. Hart, Alderwasley, Derby (Coloured); J. Egan, Newark; C. Chaloner.

COCHINS (Cinnamon or Buff).—First, W. A. Taylor, Manchester. Second, T. H. Barker, Hovingham. Highly Commended, H. Savile, Ollerton, Notts; Ganson & Jefferson, Whitehaven; J. Cattell, Birmingham.

COCHINS (Any other variety).—First and Extra, T. Stretch, Ormskirk (Partridge). Second, E. Haworth, Haslingden (White). Highly Commended, Mrs. A. Williamson, Leicester (White); B. S. Lowndes, Stoney Stratford (Partridge); J. K. Rodbard (Partridge); J. A. Taylor, Manchester (Partridge).

BEANHANS (Any colour).—First, Mrs. F. Hunt. Second, E. Leech, Rochdale. Highly Commended, J. K. Fowler, Aylesbury.

HAMBUERS (Golden-spangled).—First, J. S. Senior, Dewsbury. Second, G. Holmes, Driffield. Highly Commended, H. Beldon; H. R. Ashton.

HAMBUERS (Golden-pencilled).—First and Second, J. R. Jessop, Hull. Commended, H. Beldon.

HAMBUERS (Silver-spangled).—First, H. Beldon. Second, J. Walker. Highly Commended, H. Beldon; H. Pickles, jun., Earby, Skipton.

HAMBUERS (Silver-pencilled).—First, H. Beldon. Second, H. Pickles, jun. Commended, C. Haworth.

POLANDS (Any variety).—First, J. S. Senior. Second, Mrs. E. Procter, Hull. Highly Commended, Mrs. E. Procter; G. W. Boothby, Louth, Lincolnshire.

ANY VARIETY, NOT BEFORE MENTIONED.—First, W. H. Tomlinson, Newark (Sultans). Second, Col. S. Wortley, Grove End Road, London (French). Highly Commended, Rev. P. W. Story, Daventry (Nigger Bantams); Mason & Walker (Black Hamburgs). Commended, Mrs. J. E. Cross, Brigg (Crown-Coups); J. K. Fowler (French).

GAME BANTAMS (Any variety).—First Mrs. E. Crawford, Southwell. Second, W. F. Entwistle, Leeds (Black Reds, Game). Highly Commended, W. Parker, Clay Cross; Rev. G. Raynor, Tombridge (Black Reds); L. Biney, Manchester; E. Toder, Little Carlton. Commended, W. Dale, Weston-uper-Mare (Black Reds); R. Smith, Hull; J. Gawan, Beverley. Cock.—First and Cup, J. Fletcher. Second, J. Bamber, Accrington (Black Red). Highly Commended, W. F. Entwistle (Black Red); J. J. Cousins, Alerton (Black Reds); T. Whitaker, Melton Mowbray (Pile); B. Jarvis, Mansfield; W. J. Cope, Larnsey (Black Red).

BANTAMS (Gold or Silver-laced).—First, H. Praycott, Humberstone. Second, T. C. Harrison, Hull. Commended, T. C. Harrison; H. Beldon.

BANTAMS (Black or White).—First, E. Cambridge, Bristol (Black). Highly Commended, J. R. Jessop; W. H. Tomlinson; W. E. Graham. McCrosie; S. and R. Ashton, Maccam. Commended, H. Beldon.

DUCKS (Aylesbury).—First, Mrs. M. Seamons. Second and Highly Commended, J. K. Fowler.

DUCKS (Rouen).—First, J. J. Stett, Rochdale. Second, E. Leech. Commended, H. Dowsett, Tisbury; P. Parlett, Chelmsford.

DUCKS (Any other variety).—First, T. C. Harrison. Second, J. Dixon, Bradford (Bantams).

SELLING CLASS (Any variety).—First, H. Savile (Crown Coups). Second, W. A. Taylor, Aitclough (Cochins). Highly Commended, M. Ferrand, Dalton (Spanish); S. C. Noble, Kendal (Silver-spangled Hamburgs); Lady L. Clauert (Houdans); Bowman & Pearson, Whitehaven (Silver-spangled); H. M. Julian (Game); T. C. Harrison (Ducks). Commended, Ganson & Jefferson (Rouen).

PIGEONS.

CARRIER.—Cock.—First, J. Hawley, Bingley (Black). Second, J. C. Ord, Fimlico, Leeds. Highly Commended, R. H. Artindale, West Derby; R. Fulton, Doughty; E. Tardley, Birmingham. Commended, Dr. Thompson, South Black. Hen.—First, J. Hawley (Black). Second, R. Fulton. Highly Commended, J. Hawley (Dun). Commended, R. Fulton.

POUTER.—*Cock*.—First, W. Harvey, Sheffield. Second, P. H. Jones, Fulham. Highly Commended, R. Fulton; H. Yardley. Commended, R. Fulton; P. H. Jones. *Hen*.—First, W. Harvey. Second, R. Fulton. Commended, J. Hawley (Blue).

TUMBLERS (Almonds).—First, J. Hawley. Second, P. H. Jones. Highly Commended, R. Fulton; F. Key, Beverley. Commended, R. Fulton.

TUMBLERS (Any other variety).—First, J. Hawley. Second, R. Fulton. (Agate Mottled). Highly Commended, R. Fulton (Mottled); H. Yardley; T. Statters, Hull (Kites). Commended, Mrs. J. E. Cross (German Feather-footed).

BARNIS.—First, J. Firth, jun., Dewsbury. Second, J. Hawley (Black). Highly Commended, P. H. Jones. Commended, A. Dove, York; P. H. Jones.

OWLS.—First, J. Fiddling, jun., Rochdale. Second, J. Clark, Thirsk (White African). Highly Commended, A. Dove. Commended, J. Marshall, Driffield.

FAN-TAILS.—First, J. Hawley (White). Second, R. Moll, Hull. Highly Commended, H. Yardley; T. Ellington, Beverley. Commended, T. C. and E. Newbitt, Epworth, near Bawtry.

JACOBIANS.—First, J. Hawley (Red). Second, T. C. & E. Newbitt. Highly Commended, C. Bulpin, Bridgewater.

TURBITS.—First, T. Statters. Second, J. Thackray, Petergate, York. Highly Commended, J. Hawley (Silver); W. Lund, Shipley; P. H. Jones; J. Thackray. Commended, J. T. Lishman, Gillington; R. Paterson, Melrose (Blue); R. Wilson, Thirsk (Blue); C. Bulpin.

DRAGONS.—First, P. H. Jones. Second, H. Yardley. Highly Commended, H. Taylor (White). Commended, H. Yardley; J. Deakin, Sheffield; C. Bulpin.

ANY NEW OR DISTINCT VARIETY.—First, J. T. Lishman (Magpies). Second, R. Moll (Nuns). Highly Commended, J. Hawley (Trumpeters); J. T. Lishman (Swallow); H. Yardley; J. Clark (Swiss). Commended, H. Yardley; Dr. Thompson (Archangels); H. Draycott (German Toys); S. A. Wyllie, Kingston-on-Thames (German Toys).

SELLING CLASS.—First, H. Yardley. Second, E. J. Bell, Whitefriargate, Hull (Mottled Trumpeters). Highly Commended, J. Hawley (Pouters); C. Bulpin. Commended, H. Taylor (White Dragons); J. Firth, jun.; J. Hawley.

RABBITS.

LOP-EARED (taking all properties).—First, Cup, and Second, W. Allison, Sheffield. Highly Commended, A. H. Easton, Hull; W. S. Hornby, York; C. Gravill, Thorne; M. Millington, York. Commended, A. H. Easton; J. R. Jessop; J. Wagstaff, Doncaster; S. Hall.

LOP-EARED (Black and White, Grey and White).—First, M. Millington. Second, A. H. Easton. Highly Commended, R. Keyworth, Hull; C. Gravill. Commended, W. S. Hornby; J. Wagstaff.

LOP-EARED (Yellow and White, or Tortoiseshell).—First, A. H. Easton. Second, C. Gravill. Highly Commended, M. Millington. Commended, W. Allison.

HEAVIEST.—First, J. Taylor. Second, A. H. Easton. Highly Commended, W. Pratt, Birmingham. Commended, W. Neal, York.

PAIR OF ANY OTHER VARIETY.—First, C. Rayson, Manchester (Angora). Second, R. R. Wise, St. Ives (Silver-Grey). Highly Commended, A. H. Easton (Silver-Greys); R. R. Wise (Silver-Greys); J. R. Jessop (Himalaya); C. Rayson (Himalaya). Commended, J. Taylor (White and Gold).

The greatest length of ear was 2½ inches, and the greatest width 4½ inches. The heaviest weighed 14 lbs.

CANARIES.

BELGIAN (Yellow).—First, G. Grant, Beverley. Second, T. C. Harrison. **BELGIAN** (Buff).—First, J. Bexson, Derby. Second, G. Grant.

MULE.—First, W. Campey, Beverley (Goldfinch Mule). Second, J. Bexson (Jonque Goldfinch).

MARKED.—First, J. Bexson (Yellow). Second, J. Gawan.

SELLING CLASS (Any Variety of Small Birds).—First and Second, J. Gawan (Canary and Redcap).

JUDGES.—Mr. Edward Hewitt, Sparkbrook, Birmingham; Mr. H. Adams, Beverley; and Mr. Enoch Hutton, Pudsey, Leeds.

INCUBATORS—RICE AS FOOD FOR POULTRY.

ALTHOUGH a manufacturer of incubators, may I be allowed to say one word in their favour? They possess at least one qualification, a most important one, to which, perhaps, many a breeder has never given a thought—an incubator is always a friend in need. I can speak very forcibly on this point this season, for hardly a chicken I have but owes its life either directly or partially to an incubator. My sitting birds have been mostly Brahma pullets, and have accordingly been in most cases restless or awkward—sat well enough, perhaps, part of their time, or else managed to kill their chickens as they hatched. They also sat on stale eggs one month or six weeks old, the chickens from which are always difficult to get out of the shell. Then my incubator was a friend indeed. It was never restless—it never trod its chickens to death. Let me, then, as a lover of poultry, not as an incubator-maker, draw the attention of all breeders strongly to this point, and also to the fact that, with an incubator working, a hen never need have only half a brood of chickens to run about with her.

Allow me also, with all submission, to state that my experience of rice meal and feeding rice is totally different to the advice I have seen repeated more than once. I find it the most valuable food—the staple, I may say, wherewith to work all other foods. My birds have done admirably on it, and for price there is no comparison between it and barley or oatmeal. —FRED. H. SCHRÖDER, *Rickmansworth*.

EFFECTS OF CHILL UPON UNDEVELOPED BROOD.

On the 24th of May, 1866, I stocked my unicomb hive with an artificial swarm, by driving the bees out of an ordinary straw hive, and then running them with their queen into the observatory hive. The queen was very prolific, and in three weeks had filled almost every unoccupied cell with brood, and young bees were emerging from their cells on the twenty-first day after the introduction of the swarm.

I left home upon the 16th of June, and on my return, only three days afterwards, observed a great number of bees dead on the ground in front of, and also at the entrance of the hive. At first I supposed that the hive had been attacked by strange bees, but on opening the shutters perceived that the bees were dying of starvation. Having removed the hive into the house, as the weather was very inclement, I sprinkled the bees with warm syrup, and eventually about a fourth part of them revived; but the queen with the remainder had succumbed to cold and famine. My first impulse was to destroy the colony, and remove the combs, which were entirely filled with brood, but on further consideration I resolved to wait and see if the bees would attempt to raise a queen, and also what would become of the brood. For some days perfect bees continued to emerge from the cells, but all that came out subsequently were more or less imperfect in one or both of their wings; many, indeed, looked exactly as if their wings had been cut off quite close to their bodies. When a few days old, these bees as usual came out to take an airing, and fell to the ground, so that the hive was for some time constantly surrounded with these unfortunates crawling about in all directions.

The bees did not attempt to raise a queen, so in about a week I presented them with a young queen as the legitimate successor to the vacant throne. Although the bees had been so long without a queen, she was not accepted without a good deal of harsh treatment, and I had to release her several times from the clutches of her future subjects. As the surviving bees barely occupied one-half of the hive, a large quantity of brood was entirely neglected. This did not, however, produce any symptoms of foul brood. The dead brood was for the most part dragged out of the cells sooner or later; but when the grubs were small, a spot of discoloration was visible at the bottom of new cells. Eggs subsequently deposited in these cells were hatched in due course, and no disease has since made its appearance in the colony.—J. E. B.

BEE MANAGEMENT.

"CAN you inform me if this is the direct way to a certain house?" inquired I of what appeared to be rather an eccentric character, one day when paying a visit to a certain bee-keeping friend. "Did you pass a big white house and a large black dog lying in front? If so, you will come to the house as soon as you pass over the bridge; but if you did not pass it you will have to turn back." This was the rejoinder. The same thing applies to many subjects, but to bees in particular, as, to come to the proper mark, we must take care to pass the proper points that may be in the way to whatever we aim at.

Supposing, then, that apiarists have managed their bees with every care and caution from September up to this date, having been careful at that time to have them well fed, thoroughly defended from the inclemency of the weather, internal moisture, and vermin—if all this has been done we may presume them to be on the fair road to success, and that they will not require to turn back, or to wait another season, but will be sure to gain the mark. I will, therefore, endeavour to give a few instructions relating to the management of bees from this time forward, so that the most may be made of them.

Presuming, then, that the stocks are in fair condition, that they are well aired, the floor board cleaned, and pollen-carrying commenced, the apiarist ought to attend to them, and by judicious feeding to have them in a forward state at the end of April or the beginning of May, or, according to circumstances, it may be the end of May or beginning of June; but at whatever time they become crowded, the apiarist ought to mark those intended for swarming and those for sterilizing, pushing forward the former (every fourth hive should be kept for this purpose), and giving additional room to the latter, so that nothing may impede their progress, assisting them at the same time with whatever empty combs he may have in his possession. By pursuing this course the apiarist will seldom fail to have an abundance of honey even in a year like 1867, when a

neighbour of mine took no less than 42 lbs. of first-class surplus honeycomb from each hive, simply by working up to these directions.

To return to the subject of swarming. I will endeavour to point out the cause and effect, describing, as I proceed, the different phases that take place, and how a swarming hive may in some years be the most profitable. As I have already mentioned, every fourth hive ought to be allowed to swarm, or, which is better, be kept for making artificial swarms. The first signs of swarming are a number of the older bees becoming less active, the cause of which is that every cell in the hive is occupied. The queen, finding no place in which to deposit her eggs, becomes restless, traversing the hive in an uneasy manner, and not unfrequently rushing towards the outside combs, which being disliked by the bees, she is commonly surrounded by their ceasing to open up a clear way for her passage, but rather forming, as it were, a kind of encasement; a general commotion arises as the heat increases, and often the swarm departs, almost the whole of the bees leaving, many hundreds of young ones falling on the ground, not able to follow, and at this time not a single queen cell has been commenced. These are the swarms that frequently go astray, issuing without the slightest warning, and leaving the apianian to deplore their loss, the only means by which he could have saved them being to take them artificially. There is another phase which sometimes lasts so long that it causes the bee-keeper to lose all patience—at least it often makes him lose all honey by their idleness.

When the cells have become fully charged the queen paces to and fro until she is encased and permitted to range through part of the hive only, when, being kept apart from many of the young bees, they immediately commence queen cells; for be it understood that young bees are those which commonly perform that duty, the old bees taking less interest in it than the young ones. Whilst this is going on the bees get divided, as it were, the old queen attempting the destruction of her rivals while yet in embryo, and in this she often succeeds; but when bees once commence raising queens they are not easily thwarted, although some may be destroyed. This rather increases their vigour and determination, and as the heat increases their activity the commotion commences, the queen straining every nerve to destroy her successors, and the young bees pertinaciously resisting until the old queen, once so reluctant, becomes but too glad to resign her own will to that of her people, and woe betide the haughty sovereign who will not do this.

The swarm having now issued, and being safely hived among combs of the previous year—which the apianian will always have by him if he attends to my instructions—if early, and it happens to be a protracted honey season, it will, with its after swarms, produce more honey and combs for future use than if swarming had not been allowed. It must, however, be borne in mind that, as a rule, unless in protracted seasons, the storified hive is the profitable one for the current year; but to insure success and to have in readiness a large quantity of empty combs in case of foul brood, or to use for nading or the exchanging of full for empty combs when a sudden honey harvest presents itself, it is essential that a fourth of the stocks should be allowed to swarm annually.

To insure success with hives on the storified principle they must be attended to in time ere they have settled on swarming, giving room below if honey is yet scarce, but if plentiful the super may be put on. Much attention is, however, required, as giving room does not always prevent swarming, for bees will frequently swarm out of a large hive only partially filled, the same as from a small one. The cause of this is that it never was designed that a queen should lay all her eggs in one season, or that she should lay continually. Nature demands a rest, and this happens earlier with some queens than with others. So, when a queen relaxes laying whilst the hive is still active, the bees feel indifferent towards her, young queens are brought forward, and the old queen is commonly killed by the young ones, or meets an untimely end by her own subjects; thus many a young and fertile queen is lost. The only way to prevent it is to remove her, if a valuable one, ere they have done with her; and a stock under these circumstances, when the hive is well filled with young bees, will make more honey, which, moreover, is sure to be free from brood while the young queens are coming forward, than if the old sovereign were still regnant.

Small nuclei ought to be formed in case of any accident happening to the old stock or the old queen and every cell but

one cut out, so as to prevent after-swarms issuing, as they will undoubtedly do if this precaution be not taken. I have had swarms issuing from stocks after being divided into three. It will be easily seen from the foregoing under what circumstances piping takes place before a swarm has issued, and how to prevent swarms issuing, and that swarming at all is a natural act arising from different circumstances through the instinct of the bees.

I have thus given a brief outline of the management of bees, pointing out the appearances at swarming, and its phases as learned by long and patient watchfulness and by observation of the nature of the bee. I have not worked on the experiments of others, but started on a basis of my own, observing patiently for more than a quarter of a century, and carefully watching every aberration that took place; nor were my observations confined to what may be termed the dingy houses of olden times—viz., straw hives, but the modern hive with many of its improvements.

To insure success with bees, everything that will economise life should be resorted to, not, if possible, allowing a single bee to perish. Using nice dry mats made of straw for their floors in winter would save many a bee. Many bee-keepers about here appraise each bee in February and March at a halfpenny, and the following anecdote will show what value an old man put on his bees. He had a favourite cat, and one day a bee happened to be on the window, when pussy made a spring and broke the window. "Confound it," said the old man, "there's a guinea bee killed." Attending carefully to bees during autumn and winter is the surest way to success, at least it has been proved to be so by—A LANARKSHIRE BEE-KEEPER.

P.S.—I have in my possession frames which were used by me many years before the famed Woodbury hive made its appearance, and which were subjected to many an alteration of form for the sake of observation, although those commonly used by me were frames left open below, having the top bar projecting over the hive, and having the two end pieces only. This being the shape of the frames, the outside case had one end moveable, sliding on two dovetails, by which means the hive could be enlarged or contracted at will, being partly on the lateral system, but never allowing it to be larger than a common hive, as I always considered the lateral or collateral system an utter abomination, and in direct opposition to the nature of the bees.

OUR LETTER BOX.

FOWLS DYING WITHOUT APPARENT CAUSE (C. E.).—It would have rendered it easier for us to have given an answer if you had told us the breed of the fowls that have died. You say Spanish and Brahmas have escaped. If those you have lost were La Fleche there is no marvel; they are healthy in the morning, dead at night. Creve Coeur are sometimes sick, but they seldom die. There is no fault to find with the feeding; but we are always averse to feeding with bad food. There is no economy in it, and it should be portioned rather as to weight than bulk. Lettuce is good for them, cabbage is little better than nothing. Feed on your kitchen scraps, with your best barley. Have they a grass run? If they have not, it is probable they die from internal fat. We never tried lobster as poultry food, but we should not hesitate to do so. The barley is perfectly clean, and in the absence of other proof we should be disposed to attribute the cause of death to pecking the fresh paint. All birds are fond of doing so. If they have no grass run cut some heavy sods of growing grass with plenty of mould, and let them have it every day.

GAME FOWLS WITH DISEASED LIVERS.—"For some time past several of my Game hens have died, and on opening them their livers have been invariably found to be full of small stones, which no doubt caused their death. They are Duckwing Greys. Can any one explain the origin of their disease, and suggest a remedy for it?"—E. O.

PARROT SUBJECT TO FITS (Parrot).—You have not stated what kind of Parrot you have. If it be a Grey one, the only reason we can assign for its having fits is that it has not sufficient moist food, and the seed is not nourishing enough. It should have scalded bread mixed with hempseed, fresh every day; water to drink should also be given, and occasionally fruit of any description. Equal quantities of hempseed and canary seed should be placed in the feeding box. Should the Parrot continue to have the fits, mix one-third of rum to two-thirds of water for it to drink and give it a piece of bread or biscuit soaked in this mixture while warm and occasionally also in warm coffee.

MAGGOT IN CORKWORK (R. Palmer).—We know of no application that will check its ravages, unless you can soak the model in spirit of turpentine.

POULTRY MARKET.—MAY 13th.

We have still but a scanty supply of goods at market, and prices are high. We may shortly look for a better supply of some of our spring poultry.

	s	d.	s	d.	s	d.	s	d.	s	d.
Large Fowls.....	4	6	4	5	0	0	0	0	0	0
Smaller do.	3	6	4	0	0	0	0	0	0	0
Chickens.....	3	0	3	6	0	0	0	0	0	0
Geese.....	6	6	7	0	0	0	0	0	0	0
Ducklings.....	3	0	3	6	0	0	1	4	1	5
Pigeons.....	0	8	0	9	0	0	0	8	0	9
Pheasants.....	0	0	0	0	0	0	0	0	0	0
Partridges.....	0	0	0	0	0	0	0	0	0	0
Guinea Fowls.....	0	0	0	0	0	0	0	0	0	0
Hares.....	0	0	0	0	0	0	0	0	0	0
Rabbits.....	1	4	1	5	0	0	0	0	0	0
Wild do.....	0	8	0	9	0	0	0	8	0	9

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MAY 21-27, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clear after Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
21	TH	Show of Royal Hort. Society of Ireland.	66.5	45.1	55.8	18	2	44	52	47	4	47	4	47	29	1	138
22	F	Royal Agricultural Society, General	65.9	42.6	54.2	17	6	4	51	7	37	4	59	7	2	3	143
23	S	Crystal Palace Show. (Meeting.)	67.9	44.2	56.0	14	59	3	55	7	23	5	9	9	1	3	144
24	SUN	1 SUNDAY AFTER ASCENSION.	67.0	43.3	55.6	11	58	3	57	7	10	6	19	10	2	3	145
25	M	Anniversary Meeting of Linnean and	66.6	43.3	55.0	15	57	3	58	7	11	7	4	11	3	3	146
26	TU	(Royal Geographical Societies.	67.3	43.0	55.2	18	56	3	59	7	19	8	4	11	4	3	147
27	W	Royal Botanic Society's Show opens; (Meeting of Royal Agricultural Society.	66.3	41.9	55.6	22	55	3	0	8	34	9	morn.	5	3	148	

From observations taken near London during the last forty-one years, the average day temperature of the week is 66.9°; and its night temperature 43.8°. The greatest heat was 89°, on the 22nd, 1847; and the lowest cold 20°, on the 23rd and 25th, 1863; and 23rd, 1861. The greatest fall of rain was 0.64 inch.

A TRIO OF SIMPLICITIES.



QUAL to the blue Lobelia as an early spring decorative plant for the greenhouse or conservatory is the old but deservedly popular annual, *NEMOPHILA INSIGNIS*, and yet how seldom we see its decorative capabilities conducted in a manner worthy of the simple beauty of the plant itself when anything like justice is done it in respect to ordinary cultural attention. Wiry, drawn, and sickly, it may commonly be seen skulking in an out-of-the-way place or behind the commissariat department of a more aristocratic neighbour, as if ashamed that its plebeian order should be seen, or its miserable habiliments be looked on with contempt. Far less commonly is it to be seen clothed in chaste and flowing drapery, neat, trim, and in blooming health, standing boldly forward, challenging inspection, and reciprocating the smiles of appreciation which under these circumstances will be accorded to its native grace. I will not for a moment call into question the laudable ambition which animates the breasts of practical gardeners and horticulturists of the present day. The triumphs and successes which have been attained are a standing monument to their skill, energy, and industry. But has not this spirit of emulation—honest and praiseworthy all must allow it to be—had a tendency to direct attention almost exclusively to the higher regions of floral art? while subjects of less importance have become in a measure forgotten, though they are nevertheless valuable adjuncts, not merely on account of their intrinsic beauty, but in many instances as forming the connecting link between the dreariness of winter and the profuse beauties of summer.

The picture I have drawn of the *Nemophila* is not an ideal one. For the past two months it has occupied a prominent place in the house which it is my duty and pleasure to keep constantly gay and bright with flowers in variety. Associated with Azaleas, Camellias, Roses, Pelargoniums, Calceolarias, Cinerarias, &c., it has given a diversity of form, as well as of colour, which has been greatly admired. Its light airy appearance, blending in a pleasing manner with the somewhat massive and stiff plants associated with it, has added much to the beauty and effect of the collection as a whole. For a continuous fringe or edging to a mixed collection of plants in flower, nothing can well be more elegant and give a more finished appearance than a line of the blue and white varieties in mixture. As a plant for a hanging basket it is extremely suitable, and has a charming effect. Another and important advantage connected with it is, that it is within the reach of all who have a sixpence and a plot of ground to spare in September.

I sow in the first week of that month in an open place in drills a foot apart, choosing a firm and rather poor piece of ground in order to secure a somewhat slow and sturdy growth. When well above ground the plants are thinned out, leaving them singly 2 or 3 inches apart. Every individual plant then becomes well hardened by a constant circulation of air about all its parts and is in a state to

resist the effects of any ordinary winter. If left in the rows unthinned the centres of the plants will become drawn and tender, and the whole of the sowing will be sure to be killed by frost.

The plants which are intended for window decoration are potted in 6-inch pots, and plunged in ashes in a cold frame, giving them all the sun and air possible, and closing the sashes only in extremely wet and boisterous weather. Close confinement and tender nursing are ruinous to them. In January they are transferred to a very light and airy shelf in the greenhouse. In February they will commence to open their flowers, and during the latter part of the month and throughout March and April they will continue masses of chaste beauty, falling over the pots in folds and tresses of the most delicate colour and texture. To keep them, however, in health and in continuous bloom for this length of time attention must be paid to watering. If once allowed to become very dry the foliage turns yellow and sickly, and the beauty of the plants is gone. They are quite worthy of an occasional dose of liquid manure, which improves the colour of the flowers, and prolongs their season very considerably.

The plants which are not required for in-door effect are left in the seed bed, and transplanted to the flower garden in March. If planted on the massing system for an early display, they should be packed in the beds as closely as possible. A bed of them here (April 29th), in a north-west aspect in lat. 53° N. is covered with bloom, presents a cheerful appearance, and is much admired. Plants raised from seed sown in spring are poor in comparison to those sown in the autumn. They do not even approach them in size, colour, or duration.

Much of that which I have stated with regard to the *Nemophila* will apply to my next simplicity—*Collinsia Verna*. This is distinct from all others of the family. It is more hardy than they, and possesses the important property of flowering much earlier. It is worthy of universal cultivation. From the humble plot of the artisan to the elaborate parterres of ducal gardens, its vernal beauty entitles it to a place where it will hold its own amongst the limited floral surroundings which exist at the season of its blooming. A few well-grown potfuls in a conservatory during March are sure to attract attention.

The cultural attention may be precisely the same as for the *Nemophila*, except as to sowing. Considerable moisture, constant and uniform, is necessary to insure germination. The ground at the season of sowing—the end of August—cannot be depended on to afford these essentials. The plan I find the best is to sow in pots, which are kept standing in saucers of water. Requisite moisture is thus supplied by capillary attraction. The pots are placed in a cold frame, and shaded until the seedlings appear. When these are fairly up they must be pricked out in the open garden, or in pots if a few are desired to bloom in-doors. Their great enemies are slugs. From the persistency of their attacks, and their determination to break through the ordinary barriers of soot, lime, guano, &c., this plant must be a dainty dish to them. My sheet-anchor is to saturate some sand with gas tar, and lay a band of it

round the bed in which they are planted, pouring from time to time a little fresh tar on the sawdust. The slugs will not face this.

The plant which completes my trio is the SINGLE ANEMONE. Some may not consider the harmony good here, as this plant is different in character from the foregoing. To this I will not object, but when the flowers are seen in large masses, their brilliant and diversified colours burnished by the early sun, and their glittering forms dancing in the gentle breeze, which is drinking the morning dews from their gorgeous cups, they are a sight dazzling to look upon. The foliage, too, how elegant it is! a garb, indeed, which many a Fern might be proud to wear. And what is to prevent this plant from becoming a staple object of beauty in every garden? Simply nothing but plenty of seed, which it yields in abundance, and a patch of ground to grow it on. I am perfectly aware that to produce individual flowers of high excellence some preparation is necessary. I am not now looking at it as a florists' flower, but in its adaptability for general effect, and the simplest mode of managing it. This, then, after a considerable degree of experience, I find to be by sowing a bed of seed annually early in May, or as soon as ripe. Sow in drills about 9 inches apart, well watering them previous to putting in the seed, and keep the ground moist and shaded until the seedlings appear. Thin them out when large enough to handle. Give them generous summer treatment by frequently stirring the ground, and occasionally water them with weak liquid manure. If well attended to in all these respects, and the weather is mild, they will commence flowering the same autumn.

When the beds are cleared of their summer occupants lift the Anemones in clumps, and plant them in the beds as thickly as it is possible to crowd them in. In March, April, and May they will give a return which will amply compensate for the time and trouble expended in their preparation. The roots can of course be taken up and planted again in the autumn, but the summer beds are seldom cleared in time for them to flower sufficiently early by this mode, and if planted in reserve I have not found them remove so well, and make such certain and satisfactory progress as seedlings. A gentleman, a former employer, on April 20th writes me: "The Anemones, as usual, are truly splendid, the attraction and admiration of the neighbourhood." This, I am sure, is only doing them the simple justice which their beauty demands.—J. W.

THE MEANS FOR PREVENTING DAMPNESS ON GRAPES.

"Why does my neighbour make his Grapes hang till the end of January, while mine are mouldy in December?" To some nothing seems so mysterious in the cultivation of the Grape as this difference, and therefore I venture to offer a few remarks on the subject.

It must be owned, that if Grapes are more valuable at one time than another, that time is the Christmas holidays, and it is provoking to find that the beautiful bunches of Grapes, which in November promised to decorate many a Christmas dessert, are shrivelling and blue with mouldiness when they are really wanted. That some persons do not experience an inconvenience of this kind is well known, and their neighbours wonder at a success which no pains of their own will secure, and which have only one fault, that of misdirection. Grapes are ripened well and then protected with a care which defeats itself. The vinery is shut up closely to keep out damp, fires are lighted to complete the ripening, and greenhouse plants are brought in to participate in the shelter. The first two are the provisions made for safety; they are in reality the conditions of destruction.

When Grapes are perfectly well ripened they have within themselves the elements of preservation in a variable degree. Fleshy sweet berries, such as Muscats, have the greatest tendency to remain unchanged; juicy, sub-acid sorts, like the Black Hamburgh and Sweetwaters, on the contrary have the least. The difference appears to depend upon the proportion of sugar they respectively form; the sweetest Grape keeps best, the most acid worst. In either case dampness promotes decay, dryness arrests it. There is no doubt that by a very skilful management of warm dry air, raisins might be prepared from Sweet-water Grapes as they now are from Muscats; but in a country like England, with the atmosphere always containing so much water suspended in the form of invisible vapour, some precautions must be taken to deprive the air of its moisture as far

as practicable. The question is, What are those precautions? Merely to shut up a vinery is to do nothing, or worse than nothing. Air is not the less damp when enclosed between brick walls and a glass roof. As it was when shut up so it remains, changed by nothing except the addition of more moisture by indraught through the door, roof, and ventilators. Plants brought in for shelter contribute nothing to dryness; on the contrary, the perspiration of their leaves very sensibly diminishes it; moreover, during the cold nights of December the aqueous vapour of the house itself—a most formidable enemy, condenses on the glass roof, and drips upon the bunches; then the footstalks of the berries soon become brown and dead, moulds—funguses—invade the bunches, and corruption spreads among them.

What ought to be done is this. The Grapes being ripe, the inside of the vinery should be made as dry as possible by the constant admission of dry warm air whenever the mid-day is warm and sunny, and it should be still further dried in damp weather by slightly heating the flues or hot-water pipes. It is not a bad plan, indeed, to open all the ventilators for a few days, a brisk heat being maintained at the same time. In this manner the floors, walls, and other objects will be sufficiently deprived of their moisture by the rapid passage of air in consequence of the inequality of temperature between the interior and exterior of the house. At no time under any pretence ought water to be admitted. Good gardeners know this, but amateurs do not. In Spain, where the finest dried Grapes in the world are prepared, it is found by experience, that if only a little dew falls on the Grapes while drying, although they are sweet fleshy Muscats, the raisins are apt to spoil when packed in boxes. Dryness of the air and as much ventilation as it is possible to give, are the conditions to be secured if ripe Grapes are to be kept long during the winter.

If, however, the roofs of the vineries are in a bad condition, always letting in drip whenever there is a little wet outside, it is useless trying to thoroughly counteract the dampness inside, but such a query as I began my subject with, would not be asked by any sensible person whose houses were in this state. A friend who manages one of the now leading fruit-growing establishments in the county of Hants, although himself a most successful Grape-grower, found a difficulty on entering into his new situation four or five years ago, to add to the table requisites on Christmas-day a bunch of Grapes worth eating, yet he had 212 feet run of vinery. Defects in this range, which were the cause of the destruction of so much fruit, were soon pointed out. No Grapes could be better ripened; but dampness in the vineries was the evil, and this could not be remedied, for they were pronounced to be badly ventilated and badly glazed, and, perhaps, worn out as well. Be this as it may, this range came down, and has been replaced by a new one thoroughly waterproof, properly ventilated, and in every respect worthy of its name, and although this is the first year the Vines have fruited under their new roof, the change already has effected the object aimed at, for not only was the table ornamented by Grapes at Christmas, but for three months afterwards.

Something more may be done. If Grapes may be ruined by moisture falling on their surface, their preservation may be rendered more difficult by the introduction of superfluous moisture into their interior. We must not imagine that Vines are incapable of attracting dampness from the soil when Grapes are ripe. On the contrary, so long as Grapes are alive—that is to say, so long as their stalks are green, they imbibe sap from the branches, the branches replace their loss by sucking the stem, and the stem replenishes itself from the watery matter which the roots collect out of the soil. The only way to mitigate this evil is to keep the borders also dry. When a vinery is surrounded by hard gravel walks under which the Vine roots lie, the casing of gravel, half-baked during the autumn, keeps off water for a month or two till the gravel is loosened by a thaw, and by that time, in this country, Grapes generally cease to be much wanted. When, as is most common, Vine borders consist of soft naked soil, they soon become filled with moisture if exposed to the weather. At the same time the temperature of the soil has not fallen low enough to render the roots absolutely torpid. Last December the ordinary soil of a garden stood, at 2 feet below its surface, at 48°, near London, and in a warm Vine border must have been 50°, which is about the ground temperature at which the Vine commences its spring growth in this country. Under such circumstances roots in full action will absorb water with some force, and this must indirectly tell upon Grapes and diminish

the chances of making them keep. The obvious remedy is to keep the Vine border also dry.

There are various modes of effecting this object. The surface of the Vine border may be permanently concreted in a manner that has before been suggested by some persons, or it may be covered by a wooden roof as others have proposed. The simplest and cheapest contrivance is that used at Dangstein, the seat of Mr. and Lady Dorothy Nevill. There Peach trees are trained to a short south-west wall, to which is affixed a framework for lights to protect the trees from late spring frosts, and the fruit from heavy rains when it is approaching maturity. To the corresponding wall on the opposite side of the garden are trained Apricot trees, which are also provided with a casing for the same purpose. Now, these lights are doubly useful, because by the time, or very soon after, the trees begin to require an increase of exposure to the sun and atmosphere to ripen their wood, the Vine border requires shelter from the autumnal rains. A framework for the lights is roughly knocked together and placed over the Vine border, then the lights which have been taken from the Peach and Apricot trees, and which are as long as the Vine border is wide, serve to cover the whole in, and thus the border is effectually guarded from rain and very cold weather. Those who may feel inclined to adopt this plan can, according to their own fancy, please themselves whether they remove the covering in fine weather. If, however, it be thought desirable to do so, a little extra attention will be needed in preparing the covering so as to render it light and portable. Of course, these covers are not intended merely for autumn service, they also secure the borders from the bad effects of cold rain, melted snow, or frost when the Vines are in growth in the spring, and should be provided wherever fine Grapes are wanted.—GEORGE NEWLTON.

FRUITING THE ROSE APPLE.

I SEE in your Number of May 7th, that Mr. Carr, gardener to P. L. Hinds, Esq., exhibited some ripe fruit of *Eugenia jambos*, the Rose Apple, and he is stated to be the first that fruited it in this country. Instead of such being the case, I must have been the first, for I fruited it two years ago in the stove at Hooley, which was then filled with tropical fruits, and I have now young plants 3 feet high raised from the seeds.—J. C. MUNDELL, Gardener to J. C. Pickersgill-Cunliffe, Esq., Hooley Hall, Coudon.

DACTYLIS GLOMERATA VARIEGATA.

As there seems to be much difference of opinion respecting this plant, and as some writers have spoken of it as being either new or not well known, I may state that we have had it at Linton Park since 1857, and I believe before that time. In that year I had edgings of it which withstood the winter; but so many of the plants died off in the following spring that I did not plant it so extensively that season, and leaving it in the ground another year, most of the plants perished, as well as some that were kept in pots—indeed I may say I lost it wholly, but obtained it again, and with a like result. This induced me to believe that the plant was an annual, as only on the other side of the fence the green form is one of our most common Grasses; yet I hardly think this the case, and having since obtained the plant more than once from other sources, and observed a similar unsatisfactory dying-off, not in the case of a hard winter only, but with plants in the greenhouse, I am anxious to know if others have experienced similar results.

Two Grasses of a greyish hue, *Stipa glauca* and a *Festuca* (I believe also *glauca*), thrive very well, and nothing can exceed the luxuriance of the old Ribbon Grass; but, on the other hand, the variegated *Poa* spoken of indifferently by some seems likely to follow in the same way as this *Dactylis*. It has not manifested any signs of becoming green, but is liable to die off like the *Dactylis*. Perhaps some one who has been successful with the latter will report his practice; for my own part, I expected that a hardy plant, as it might be supposed to be, would require no more attention than other perennials, and consequently left much of it to its fate. Some plants, however, were retained in pots and treated as greenhouse plants with no better result. I believe that, like the *Iresine* and some other plants, it does better in the north than near London, and I hope that either Mr. Thomson or Mr. Wills will tell us more about it. I believe that it originated in the county in which the latter lately resided, as I recollect seeing it in a very

luxuriant condition in a garden near Ormskirk in 1856 or 1857, and I suppose its good and bad qualities must be well known there by this time.—J. ROBSON.

ROYAL HORTICULTURAL SOCIETY.—MAY 19TH.

FRUIT COMMITTEE.—Mr. Edmonds in the chair. A prize was offered for the best three dishes of Strawberries, for which there was only one exhibition, consisting of Oscar, Sir Harry, and Sir Charles Napier. Sir Harry and Oscar were large and of fine flavour, while Sir Charles Napier was rather deficient in the latter respect. The first prize was awarded Mr. Barnwell, gardener to John Fleming, Esq., of Kilkerran, Maybole, N.B. A first prize was awarded to Mr. Mills, gardener to Lord Carrington, Wycombe Abbey, for a dish of very fine Elton Cherries. He also exhibited an equally handsome dish of Black Tartarian or Circassian. Mr. Tegg, gardener to the Duke of Newcastle, at Clumber, obtained first prizes for excellent dishes of Royal George Peaches and Brugnion Nectarines; the fruit was very fine, and the Nectarines especially were delicious in flavour. Mr. W. Roberts, gardener to Lord Cranworth, Holwood, Bromley, sent a small, green, oval Melon, which, however, was very deficient in flavour. Mr. B. S. Williams sent fruit of a new hybrid Melon, which was grown in a small pot on the back shelf of ainery. It is said to be twelve to fourteen days earlier than any other known kind, a vigorous grower, and free setter. The flavour was good, but the fruit was not sufficiently ripened. Messrs. Harrison & Sons, Leicester, sent a seedling Apple, named Annie Elizabeth, raised from Bess Pool. It is a large ovate yellow fruit, with a solid, firm flesh, remarkable at this late season, but the flavour was rather passed. Mr. Lomas, of the Willows, Tooting, sent two handsome Cucumbers of Rollisson's Telegraph, which, however, had been kept too long, and were rather pale in colour.

FLORAL COMMITTEE.—Another very successful meeting was held this day. The removal of the shutters of the Council room and extending the tables for exhibiting the plants was a very great improvement, especially on so hot a day. There were a great many exhibitors.

Mr. Bracher, Wincanton, sent cut specimens of Zonal Pelargonium *Comte de Moltke*; also four seedling Pansies, one named Welbeck Black was the darkest-coloured Pansy yet seen; it was most intensely black, without the least shade of purple. The three others—viz., Purple Prince, Black Diamond, and Velvet Cushion, were all very dark flowers. Mr. D. Scarfe, gardener to T. Ronaldson, Esq., exhibited a seedling Pelargonium of the large-flowering section, with very crumpled dark red flowers. Messrs. Rollisson & Sons sent a large collection of plants, which was awarded a special certificate. Among them were *Gymnogramma chrysophylla cristata*, *Bignonia argyrea violacea*, *Pandanus* sp., and several other interesting specimens.

Mr. Wimsatt, Chelsea, exhibited plants of *Coleus Marshalli*, *C. Telfordii*, and *C. Murrayi*; the latter had lost its character from having been too much forced, it will be sent again, and will then, doubtless, receive a certificate. Mr. Wimsatt also exhibited several Zonal Pelargoniums of the Gold and Bronze section—viz., Empress Eugénie, Admiration, The Sultan, Viceroy, Little Golden Christine, and Little Golden Spread Eagle; the plants were small, and the Committee deferred making awards to any Zonal Pelargonium till the special show of these plants, which is fixed for the 16th of June, when a better opportunity for comparison will be offered. The special attraction in this collection of plants was the hybrid Ivy-leaved Pelargoniums, and after sixteen years' perseverance Mr. Wills has thus succeeded in producing a new race of flowers. The varieties not being named could receive no award, but they will be sent again and will then be dealt with. A special certificate was awarded the collection. Mr. North sent a golden-leaved Pansy, which looked as if suffering from disease. Mr. Salter, Hammersmith, exhibited a large collection of most beautiful *Pyrethrums*, the flowers were hardly in perfection. A special certificate was awarded them. Mr. Fry, Manor Nursery, sent a seedling *Verbena*, Dr. Livingstone, a very good scarlet flower with a compact truss, very like *Firefly*.

Mr. Tillery sent a plant of a Variegated Zonal Pelargonium, a sport from Imperial Crimson, of dwarf habit; it may be useful for edgings, but the plant was not in condition. Mr. Turner, Slough, exhibited several seedling Pelargoniums. Tronbador, of a soft salmon rosy tint with a white centre, a remarkably fine flower, received a first-class certificate. Fancy Pelargonium Fanny Gair, East Lynne, a very lively flower, Princess Teck, and Leonard, were each awarded a first-class certificate. Mr. Turner also sent several seedling Variegated Zonal Pelargoniums, some of them of great promise, particularly *Mademoiselle Nilsson* and Mrs. Hugh Burners, these will receive their awards on the special show day. A special certificate was awarded this interesting collection. Mr. Williams sent a seedling white-flowering Pelargonium, useful for bouquets, also *Arachanthus muscifer*, a very curious white Orchid, which received a first-class certificate, and many other plants, among them several Orchids. A special certificate was given for the collection. Messrs. Downie, Laird, and Laing sent four fine specimens of their Golden Bronze Zonal Pelargoniums, and Mr. Tanton, Epsom, seedling *Gloxynius*, too rough and coarse. Paul Jones, a pale lavender, was the best among them. Messrs. F. & A. Smith, Dulwich, contributed a large collection of plants; among them were *Tropaeolum* Mrs. Tredwell, Variegated Zonal Pelargoniums, and seedling Azaleas. Of the last, Rose of

Surrey is a promising flower, but the plant was too small to judge of its merits. Goliath, a large-flowering sort, is very showy, but rough in outline. A special certificate was awarded the collection.

Mr. H. Shrubsole, gardener to the Rev. C. Oxenden, Barham, Kent, sent a seedling Lobelia, called Oxendenii, having small pale blue flowers, not better than many other dwarf seedling varieties; also a small plant of Silver Variegated Zonal Pelargonium, Bride of Barham. Mr. T. Ware, Tottenham, sent a large pale salmon-coloured clove Carnation, of which the petals were so numerous and confused, that, beyond its powerful and agreeable scent it has no particular merit. Messrs. Lee, Hammersmith, exhibited *Asplenium trichomanes* Harrovii, and an Oak, named *Quercus concordia*, with pale yellow foliage; it was requested that the latter should be sent again later in the season. Mr. W. Paul sent cut specimens of *Silene pendula* and *S. pendula pulcherrima*, the *Silene pendula ruberrima* of continental nurseries. Mr. Paul also sent several Variegated Zonal Pelargoniums and a small cut-leaved Pelargonium Little Gem, with small pale rose-coloured flowers.

Mr. James Dobson, Isleworth, exhibited two or three dozen of Pelargonium Magnet; it was awarded a first-class certificate as a useful decorative market plant. It is very free-flowering and of compact habit, and has dark crimson and black flowers. Mr. Watson also sent a small collection of his Variegated Zonal Pelargoniums. Mr. Green, gardener to W. W. Saunders, Esq., brought fine specimens of *Sehizanthus pinnatus splendens*, a very ornamental annual; a first-class certificate was awarded it. In the collection brought by Mr. Green there was a small white Orchid, name and genus unknown; this was one of the gems of the exhibition; also, *Orchis fusca*, the continental variety, and a collection of alpine plants. A special certificate was awarded the collection. Mr. Bragg, Slough, received a special certificate for a collection of Pansies.

SCIENTIFIC COMMITTEE.—Dr. T. Thomson, F.R.S., in the chair. In connection with the spot in Orchids which was discussed at last Meeting, and which is still under the consideration of a sub-committee, Dr. Welwitsch exhibited a number of specimens of leaves of tropical plants, all more or less affected with a spot, which Mr. Berkeley pronounced in every instance to be the result of fungoid action, and not at all similar to that which produces spot in Orchids.

Mr. Berkeley exhibited specimens of the larva of *Coleophora hemeorbiella*, which attacks the leaves of the Pear and the Cherry, not as is usually the case by eating away the whole substance, but by attaching themselves by their discoid suctorial mouth, and extracting the sap from the parenchyma for some distance round the point of attack, which, when they have exhausted, they leave, and commence an attack in another part of the leaf, leaving a small hole similar to a leech bite. Finally they enclose themselves in the leaf, which is rolled up into the form of a tiny cigarette.

Mr. Berkeley then read a long letter from M. De Candolle on Botanical Nomenclature, which gave rise to an interesting conversation on the subject, in which the difficulties to be encountered in dealing with hybrids and cross-breeds was principally discussed. Dr. Hogg considered that the first thing to be ascertained is the point in the pedigree of plants where botanists will consider their work to have ceased, and that of the horticulturist to have begun; because it is quite evident that when a genus or species of plants is so far broken up that the numerous progeny cease to be distinguished by characters which botanists acknowledge to be essential to a correct botanical distinction, then they must be individualised by such fancy names as the florists have been in the habit of applying to them. And the next consideration would be how the system of nomenclature which may be decided upon is to be applied in practice. A sub-Committee, consisting of Dr. Thomson, Dr. Hogg, and Mr. Moore, was appointed to investigate the subject and report to next meeting.

Dr. Welwitsch threw out a valuable hint to horticulturists in regard to the cultivation of some of the most beautiful species of Loranthaceae, many of which can be cultivated on the Fig and the Orange.

GENERAL MEETING.—J. Russell Reeves, Esq., F.R.S., in the chair. After a list of donations had been read, and the election of ten new Fellows, the Rev. Joshua Dix announced the awards of the Floral Committee, and Dr. Hogg those of the Fruit Committee.

The Rev. M. J. Berkeley then commenced his observations by remarking that at the last meeting he had called attention to the "breaking" of some Tulips, which he had grown in his own garden, and said that he had since had confirmation of the view which he then held—namely, that as "breeders" they had broken in consequence of being planted late—in January instead of in November, as they had been in previous years. Every one knew how difficult it was to break breeder Tulips—indeed, it sometimes took twenty years to do so, and the cause of breaking was a mystery. To induce breaking, recourse was had to change of soil, to change of locality, and to various composts, among which various nostrums had been recommended, particularly smoky dust. Sometimes, also, crossing the flowers had been practised to bring about that result, but the cause remained a problem still unsolved. A curious point with regard to his seedling Tulips was that there was a dark brown spot at the base of each petal, and that had vanished in the breaking, giving place to a brilliant scarlet feather, which he had ascribed to the yellow shining through the red. On examining the petals microscopically he had found that the coloured cells were superficial, in fact, cuticular, and that between two layers of

these there were intermediate cells, either entirely colourless or yellow which latter produced the brilliant scarlet. The next subject to which he had to allude was canker, which all were aware is very destructive to fruit trees. In his own garden a very peculiar case had occurred on a Keswick Codlin Apple tree, a portion of which he produced to the Meeting. Swellings had formed at every division of the tree, and these swellings were covered with adventitious buds, and he produced specimens of *Rosa arvensis* and an Elm similarly affected, the whole tree in the latter case being covered with adventitious buds, which acted most injuriously.

Mr. Berkeley next read a letter from the Rev. A. Rawson, of Bromley, in Kent, with reference to an Orobanche which had come up on a plant of Madame Vancher Pelargonium, bedded out two years ago. The letter stated that the plant had been preserved, and that the Orobanche had this year been very showy; also, that this Orobanche—*O. caerulea*—which usually occurs on Hemp, as far as known does not grow naturally in the neighbourhood. Mr. Berkeley added, that he had been informed by Mr. Hally, of Blackheath, that an Orobanche, not *O. caerulea*, grows there on Pelargoniums.

A pretty golden-leaved Oak called *Quercus concordia*, exhibited by Messrs. Lee, was then noticed; and it was stated that at Sir Hugh Williams's at Bodelwyddan there is a large tree of *Quercus sessiliflora*, which presents a similar appearance, and forms a prominent feature in a lovely view. Attention was next directed to hybrid Pelargoniums between the Scarlet and Ivy-leaved kinds, and it was stated that Mr. Wills had endeavoured to produce such for sixteen years without result, but at last he had succeeded in raising hybrids. One of them, between an Ivy-leaved Pelargonium and Mrs. Pollock, had a leaf like the former, but spangled like a diseased Oak. An extremely curious specimen of a Sweet William sent by Mr. Wilson Saunders, with the leaves forming a cup round the bud, which was blanched in consequence, and a Pelargonium, proliferous from the centre of the trusses, having been pointed out as examples of abnormal growth, Mr. Berkeley read a letter from Mr. D. Wooster on the subject of the exhibition of Fungi in the autumn. In this letter Mr. Wooster expressed his opinion that Fungi are of great importance as an article of food, and that not only have the public much to learn on the subject, but many prejudices to get rid of. As an instance of the latter, he related that when on a visit to a large landed proprietor a few years ago, he found in that gentleman's woods a large group of the beautifully tinted and elegant *Agaricus timetarius*, and much astonishment and alarm were caused by his proposing that these Mushrooms should be cooked. It was only on his giving the assurance that he had often eaten the species with perfect safety that they were prepared, and all who tasted them pronounced them most excellent and delicate in flavour. Mr. Wooster added that he had received a letter from a gentleman, an excellent authority on the subject, in which reference was made to Mr. Berkeley's very interesting discourse on Fungi at the meeting of the Society of Arts on the previous Wednesday; and the writer remarked that he considered two species not mentioned by Mr. Berkeley were among the best as food—namely, *Agaricus atramentarius* and *A. comatus*.

EXHIBITORS' MEETING.—The Council having invited exhibitors to meet them at half-past 1 P.M. for the purpose of discussing the appointment of judges at the Society's Shows, a number of the leading exhibitors attended. The chair was taken by J. Clutton, Esq., and Colonel Scott attended as Secretary. Among those present were Messrs. W. Paul, Turner, Keynes, Lane, G. Paul, Wills, T. Osborn, Barr, C. Lee, Williams, Dobson, Bull, Watson, Waterer, Cathush, Spary, &c. A desire was expressed by Mr. Turner, Mr. Bull, and the exhibitors generally, to afford every assistance and support to the Council. Mr. Keynes objected to the same Judges being appointed every year: Mr. Lane to their being appointed by exhibitors. Mr. Barr thought that the Judges ought in all cases to be men who had been either successful exhibitors or cultivators. Mr. Wills did not agree in this: he considered that exhibitors might have friends, and that the Council should select whatever men they might think best. Mr. W. Paul, who stated his views on the subject at some length, said that it was impossible for awards to give universal satisfaction. The competition for prizes in many cases was very close, and not every prize was won in a canter. Exhibitors watch narrowly the development of points of beauty in their own plants, and endeavour to annihilate defects, and in consequence they know all the points of their own plants, but not those of other exhibitors. Hence they are naturally inclined to consider their own best. Neither exhibitors nor bystanders were such good judges as the Judges who have leisure to examine. The Judges should be honest, efficient, cultivating men—men who did not do right for appearance sake, but for its own. Errors of judgment might occur, but he had never seen but on one occasion a case of dishonesty at an exhibition.

After some desultory conversation it was ultimately resolved that each exhibitor should send in, on or before the 26th inst., the names of five florists or horticulturists whom he would wish to be Judges in the classes he intended to show in at the forthcoming exhibitions of this year.

THE POLYANTHUS.

A GLANCE at such flowers as Hulton's Lord Lincoln, Saunders' Cheshire Favourite, or Adis's Kingfisher, will not fail to convince any admirer of "Nature's sweetest smiles" that such

are the flowers from which the experimentalist may expect to raise by careful crossing improved varieties of this early spring flower.

I do not know that I can advance anything new, merely lessons that I have learned partly from experience and partly from other growers; yet I feel assured that any one following the simple directions I shall give will become a successful cultivator, and to this end the following particulars are essential. First, a suitable aspect. The north or east of a wall or fence or temporary shade, where they will get only the morning sun, is the aspect most favourable for their well-doing. Second, suitable soil; good loam from a field that will grow good wheat, well sweetened by exposure to frost, sun, and air, or good turfy loam well mixed with one-third of either two-year-old well-rotted cow or horse dung, well sweetened by exposure and frequent turning-over—about 9 inches deep of such soil will grow the *Polyanthus* healthy and well.

But the great secret of success lies in deep planting. In making the hole ready for the reception of the plant (which ought to have its roots washed and examined to see that they are all healthy and vigorous, and any decaying parts removed), raise it up in the centre in form of a cone, spread out the roots around it, gather the foliage erect, and fill up to about 1 inch above the collar of the plant. The advantage derived from deep planting is, that the best rootlets growing from the top part of the tap root derive more nourishment from the soil, and are more secure from drought in summer and frosts in winter. It is also necessary that they should have regular attention by frequent stirring, top-dressing with fresh soil, watering when necessary; and as soon as the truss makes its appearance, cover it over with a square of glass firmly fixed in a short stake; this will be a sufficient protection to keep off wet and some insects which injure the bloom.—*DENY (in The Gardener)*.

WOLLATON HALL.

THIS fine mansion, one of the seats of Lord Middleton, is situated in an extensive park about two miles west from Nottingham, and was built in the reign of Queen Elizabeth, with stone brought, it is said on horses' backs from Ancaster, upwards of twenty miles distant—a mode of conveyance which in those pre-railway days was, perhaps, more expeditious, and less expensive than by wheeled vehicles over the roads which then existed. The mansion occupies an elevated position in the park, and is rectangular in form, with a square tower at each corner, whilst from the centre of the building rises another tower, commanding extensive prospects. Eastwards towards Nottingham the town was shut out from view by lofty trees, but is so no longer, 150 of them having been blown down in ten minutes during a terrific hurricane in the end of 1863. Still several of remarkable size and beauty yet remain, and among them a Scotch Fir upwards of 100 feet in height, and a magnificent Beech, besides many fine Oaks scattered over the park, and, on the beautifully-kept lawn near the house, fine old Yews and Cedars once feathered to the ground, but by the orders of a former Lord Middleton they were deprived of their lower branches, and, consequently, of much of their beauty.

In a conservatory on the west of the mansion are the *Camellias*, which are the pride of the place, producing every year thousands of blooms. Some of the plants are from 12 to 15 feet in height, and have stems of remarkable thickness, whilst the profusion of large, glossy, dark green leaves attests their perfect health. They are chiefly planted as bushes in beds of loamy soil, but there are also a few very fine plants trained against the back wall. Hardly as we know the *Camellia* to be—all but hardy out of doors in the south of England—one is hardly prepared for the cool treatment which it receives at Wollaton, for no fire heat whatever is given, not even in such winters as those of 1837-38 and 1860-61. Mr. Pearson has stated (Vol. XII., page 276), the circumstances which first led to the disuse of all fire heat, and that the then Lord Middleton seeing the plants flower as well or better than ever after the former winter, never allowed the house to be heated whilst he lived; Mr. Pearson justly remarking, however, that had they been in pots instead of being planted out the roots might have suffered. It may be added, that had the plants been of less size they would also probably have been injured by the low temperature to which they were exposed, the thermometer falling to 24°; but, above all, their immunity from injury was most likely partially attributable to the growth being firm and well matured, instead of long-jointed and succulent.

The plant houses contain a choice and well-managed collection both of fine-foliaged and flowering plants, among which are good examples of *Sphero-gyne latifolia*, *Cyanophyllum magnificum*, *Marantas*; *Alocasia metallica*, *Lowii*, and *macrorrhiza variegata*; *Anthurium magnificum*, *Theophrasta imperialis*, *Crotons*, and various Ferns; whilst covering the roof of the stove are *Allamanda Schottii* and *Stephanotis floribunda*, which bloom freely and add much to the beauty of the house. In the orangery, of course empty at the time of the writer's visit—in September, there is a fine old *Wistaria* and several large *Camellias*, one plant of the Double White, about 13 feet high, being in excellent health; another plant is about 15 feet high, but not in such good condition.

In the propagating house, besides a variety of new stove and greenhouse plants, especially those most remarkable for the beauty of their foliage, there was a numerous stock of *Gardenias*, which are largely grown for winter and spring flowering.

An extensive range of lean-to fruit-forcing houses consists of three early Peach houses and vineries, together about 42 yards in length, and in which, of course, the crops had been long gathered, two succession Peach houses, 37 yards in length, and 47 yards run of vineries, containing Black Hamburgh, Frontignan, Royal Muscadine, and late Grapes. A small house is also devoted to the culture of *Musa Cavendishii*, and in it the Cotton Plant was producing its pods. For the growth of Pine Apples there is ample provision, and there was in pits and in the succession house a large healthy stock of Black Jamaica, Smooth-leaved Cayenne, and Lemon Queen Pines. Thorsby Seedling is also grown, and is found to swell freely, though not equal in flavour to the Queen Pine. The fruiting Pine stove, a neat span-roofed house, is heated by four rows of pipes for top heat, and bottom heat is supplied by two pipes in a rubble chamber beneath each bed, respectively a foot from the back, and a like distance from the front. The arrangement for filling the evaporating troughs on the pipes for supplying top heat is very simple and convenient; for by simply turning the water on in a leaden pipe extending over the troughs, it issues from a number of perforations in the pipe in as many little jets. Thus the troughs can be filled simultaneously, and the amount of water in them can be regulated to a nicety; the advantages of which are, that on the one hand by quite filling the troughs continuous evaporation can be maintained, and, on the other, if a greater degree of moisture is required to be diffused in the house in a short time, when the troughs are dry, that object can be secured by turning on only a little water at a time, so as to secure its rapid evaporation.

In the Melon house there was a good supply of fruit in all stages, the kind principally grown being the Strathfieldsaye, and for early fruiting the Bromham Hall. The winter Cucumber house was filled with Azaleas, and other plants, but was about to be cleared out. The beds are 2 feet 6 inches deep, and each is heated by a flow and return 4-inch pipe in a chamber beneath, and atmospheric heat is supplied by two flow and two return-pipes. The Cucumbers preferred for winter are Telegraph and Lancashire Witch.

The potting shed, though a place where a very important portion of the work connected with plants under glass has to be performed, rarely claims particular mention, but that at Wollaton presents a feature which deserves general imitation, for it is heated by two 3-inch pipes. How much this must conduce to the safety and success of plants removed from heated structures to be operated upon, as well as to the comfort of the men, need not be insisted on, especially as more than once Mr. Fish has referred to the subject, and pointed out the evils which are apt to result from taking plants from heat into the cold for the purpose of repotting, or of performing similar operations. It is very often want of attention to precautions such as this that makes all the difference between success and failure, although in every other respect the mode of culture may have been judicious and carefully carried out; and though every one cannot have a heated potting shed, yet it is within the power of every one to imitate it by guarding against unnecessarily exposing plants to checks from cold air and cold soil, too frequently followed by cold water. In addition to the heated potting shed there is a room for fumigation, also heated, which must be a very convenient place for effectually and economically disposing of green fly, and other insect intruders, when it may not be desirable or necessary to fumigate a whole house.

The kitchen gardens are very extensive, and remarkable for the high order in which they are kept. Altogether, with the slips outside the walls, they cover an area of about 8 acres.

The centre walk of the walled garden is 12 feet wide, and the cross walks 8 feet in width, and they are all made of great depth, with a drain beneath the centre, and edged with Thrift. On the south-aspect wall, 12 feet high, which is flued, but the heating apparatus is never used, there was a splendid crop of Peaches and Nectarines, and on the north aspect Morello Cherries were bearing abundantly; so, too, were the Apricots on the east wall, and Pears, especially the Winter Nelis, on the west aspect. The whole of the wall trees bore evidence of careful management, as did a number of pendulous queneuille-trained trees on the Pear stock, planted round the quarters, which were filled with excellent crops of vegetables. Between these and the principal walks, however, was planted a breadth of Dell'a Beet, the deep-coloured foliage of which, shining with a metallic lustre, proved very ornamental, and certainly, from the quantity of it grown, there was no fear of falling short of a supply of the roots for salads, or, indeed, any culinary purpose.

The preceding account of the gardens at Wollaton is necessarily very imperfect; much has been omitted that ought to have been noticed, but the time was too brief for a thorough inspection of the place, and it only remains to pay a well-merited tribute to the ability with which it is managed in every department by Lord Middleton's skilful gardener, Mr. Gadd.

CARBOLIC ACID v. GREEN FLY AND MILDEW.

In looking over the "Homœopathic World" lent me to read by a friend, I was much struck with the following article, which I give you at full length, hoping that you will make some remarks upon it.

"GREENHOUSES.—Insects or fly, also oidium, or white blight on Vines, may be prevented by placing a dish containing carbolic acid about the centre of the greenhouse."—HALFAY.

ON RAISING SEEDLING PEACHES.

OF the numerous and refined pleasures offered by horticulture, few are more delightful than the production of new plants from seed. The pursuit is limitless and full of pleasing though often tantalising variety, and no small stock of patience is requisite; but, per contra, a certain reward is given with indiscriminate liberality by nature to the chance efforts of the careless, and to the careful and deeply-laid plans of the skilful experimentalist. The numerous fine varieties of fruits obtained by accident prove this thorough impartiality; the theory of progressive improvement held by Van Mons has been negatived by the result of his labours, very few of the thousands of seedling fruits raised by him remaining to attest by their excellence the truth of his theory. This is encouraging to the beginner, and not disheartening to the experienced; the prizes being still open, and the more valuable from the difficulty in gaining them.

Following at a humble distance the experiments of my father, I have for some years watched with great interest the variation of Peaches and Nectarines from seed, such observations being rendered possible after the introduction of orchard houses; and I now venture to make a few suggestions to your readers, in the hope that the improvement already established may be carried a step farther by others. The Noblesse and Grosse Mignonne Peaches are so excellent that they can scarcely be improved, except in size. These two varieties constitute, therefore, the sources from which improvement may be expected. One of the most desirable qualities to obtain in a new race of Peaches must be precocity in ripening; and one of the earliest of Peaches is the Early Nutmeg, worthless as a fruit, but valuable as a parent. By fertilising this sort with Grosse Mignonne or Noblesse, a large early variety may be hoped for. As a union which may possibly lead to a curious result, I should recommend fertilising the immense Pavie de Pompone and the Fairchild's Early Nectarine with the first-named Peach.

The Petite Mignonne, a pretty early Peach remarkable for its fertility, by judicious crossing is capable also of being made the progenitor of vastly improved descendants. Its union with the Stanwick Nectarine may be productive of some interesting varieties. The Early Anne and the Acton Scot, though now superseded, are well known and available; both varieties may be improved by crossing with large Peaches—such as the Royal George, Noblesse, and Grosse Mignonne. The early Peaches I have named are now superseded by vastly improved varieties

—such as the Early Rivers, the Early Louise, and the Early Beatrice; but they are still valuable as parents, and they may by skilful crossing originate some sorts possessing the requisite faculty of precocity. A seedling Peach has already been raised, which for two successive seasons has ripened from the 6th to the 10th of July, three weeks before the Early Nutmeg, at one time the earliest of known Peaches. This is a great step in advance, and will be especially valuable in Scotland, as a Peach ripening in the south of England in the beginning of July would probably ripen in the early part of August in Scotland, and would most likely ripen on walls in districts where the Peach is hardly to be obtained.

Good Peaches ripening in the Peach season are plentiful enough, and the standard of excellence seems to have been reached in the Grosse Mignonne, the Galande, and the Noblesse; but an improvement may be established in these in point of size and hardness. The Alexandra Noblesse, raised from the Noblesse fertilised with the Stanwick Nectarine, differs from the Noblesse in having crenate leaves and globose glands; and it is not liable to mildew, a point of which the importance will be at once acknowledged by all gardeners who have grown the Noblesse, which has a strong tendency to be affected with mildew. The mixture of the Stanwick has modified this tendency, and has even almost improved the flavour of the fruit. I do not doubt but that the crossing of the Grosse Mignonne with the Stanwick Nectarine will also produce some remarkable results. To obtain an advance in size, the enormous Pavies or Clingsstone Peaches, which are amazing for their size, should be used as parents, and crossed persistently with the Stanwick Nectarine, the Grosse Mignonne, and Galande Peaches, and also with the small early Peaches before referred to.

I cannot lay too great a stress upon the invaluable qualities of the Stanwick Nectarine as a fertilising agent; it is robust, hardy, free from a tendency to mildew, and gives fruit very different from the ordinary Nectarines in size and flavour; and has the additional recommendation—no mean one in an orchard house—of having large and brilliant flowers, a property that should be always considered in starting an orchard house. The experiment of crossing Peaches with Nectarines is very interesting, the produce being given without any regard to parentage, Peaches producing Nectarines, and *vice versa*. The French pomologists, or at least some of them, deny this fact; but as I have undoubted proof of this eccentricity, I must beg to differ from "Messieurs les Pomologues," and to assert that the best evidence can be given of the indiscriminate nature of seedling Peaches and Nectarines. As interesting and distinct races of Nectarines for crossing with Peaches, I may mention the New White and the Pitmaston Orange.

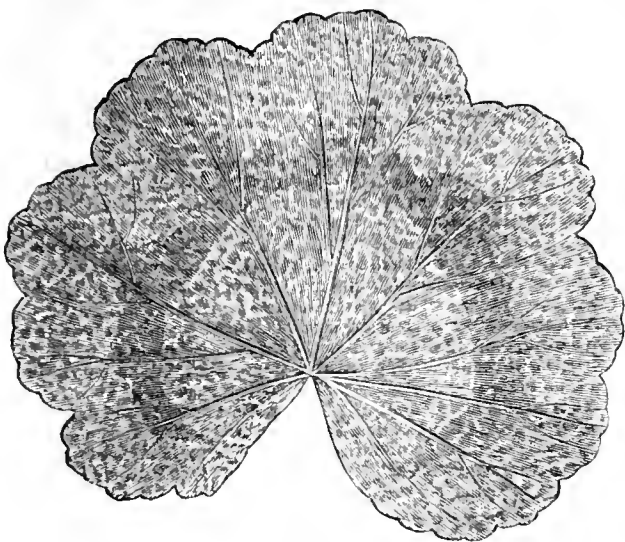
The late Peaches, of which the Boudin, Téton de Vienne, and Desse Tardive, may be selected as the types, have a great tendency to drop their fruit before coming to maturity, except in very favourable seasons. This fault is probably due to the fact that the tree has finished its growth before the fruit is fully ripe, and with the cessation of the circulation of the sap, the power of the fruit to derive nourishment from the tree is weakened. To obviate this defect, the experimentalist should select varieties of Peaches or Nectarines which continue growing to a very late period; successive generations will produce improvement in size and flavour. An American Peach named Poole's Late Yellow will hang on the tree until the middle of November; Thomas's November, Pride of Autumn, Baldwin's Late, and the Heath Clingsstone are November Peaches, and if crossed with the Stanwick Nectarine or the Noblesse and Grosse Mignonne Peaches, some singular sorts will no doubt be originated, if planted in a dry and cool house, with sufficient heat at command to exclude frost. As Peaches may be preserved a long period, the time may not be far distant when the dessert on Christmas-day will not be considered complete without the noble-looking fruit which has been the glory of the summer and autumn.—T. F. RIVERS, Sawbridgeworth, Herts (in *The Gardener*).

PELARGONIUM RETICULATUM.

THIS unique and singularly beautiful variety of the Nosegay section has leaves elegantly netted or traversed, during the winter and spring, with golden veins upon a green ground, and throughout the warm dry summer months finely marked with a tracery of green network upon a golden ground. Its large and compact trusses of rich crimson bloom are in the style of

Stella, but it is a great improvement upon that variety in its habit of growth, which is densely compact and dwarf.

It is well adapted for flower-garden groups and pot culture for conservatory decoration, also for terrace vases.



This interesting plant appears to be the only variety in cultivation with golden netted leaves, being distinct from the *Ciconium reticulatum* of Sweet, which is not found at present in trade collections.—E. G. HENDERSON & SON.

WORK FOR THE WEEK.

KITCHEN GARDEN.

ENDEAVOUR to mulch round crops in rows, if possible, doing so being much better than watering. Observe how well Strawberry beds look after being mulched; short grass, old tan, rotten dung, half-spent linings from the hotbeds, indeed any sort of litter, will do for this purpose. Nobody thinks of leaving the ground about a newly-planted favourite tree unmulched the first season, and Peas, Beans, &c., are just as much benefited by mulching as newly-planted trees. In the American ground most of the subjects there planted grow naturally in shaded places, and they will luxuriate in the hottest seasons if the beds are thickly covered with grass, fern, moss, or any other sort of mulching. *Asparagus*, this is the very best time in the whole year to apply salt or saline manures to this crop. The drainage of common sewers, stables, cow houses, and laundries, and even pond water made thick with soot will all be now appropriated to the plants. *Broccoli* for autumn may yet be sown; Grange's Early White and the Covent Garden are good varieties. *Cauliflower*, it is not advisable to sow later than the beginning of this week for late autumn use. Sow very thinly, as you can hardly expect to be able to prick-out next month, so that the crop must stand in the seed bed till fit to plant out permanently. *Endive*, about the end of May or the beginning of June is the best time to sow this very wholesome salad for autumn use, and as you ought to sow every three weeks till the middle of September, it will only be necessary to sow a pinch of seeds each time, scattering them very thinly. All summer crops, of whatever nature or kind, should be sown very thinly if any of the plants are to be afterwards transplanted. They may, it is true, be thinned-out if they happen to be too thick; but if the weather is dry at the time much injury may result, and on the whole it is better to sow thinly in the first instance. *Lettuces* and other succession crops, continue to sow.

FRUIT GARDEN.

Thinning-out and regulating the summer growth of Gooseberry, Currant, and Raspberry bushes is not so much attended to as it ought to be. Examine Peach trees that suffered from frost last season, and carefully remove every piece of gum and canker with a sharp knife. Endeavour to prevent the progress of the green fly, and see that the roots are not suffering from want of moisture, otherwise much mischief will be produced by a wet autumn. Destroy caterpillar and black fly on Cherry

trees by giving a forcible washing to the trees with clear limo water. In training Raspberry canes there is no system so profitable as keeping the bearing shoots at a regular distance from each other in a straight row, and by tying them to two straight rails. Whatever system of training is adopted, no time should now be lost in removing all those young shoots that will not be required for bearing wood next season.

FLOWER GARDEN.

On the average of seasons we seldom experience late frosts after the middle of the month, and having of late so much sunny weather, we may safely begin planting out half-hardy plants in the flower garden. Beginning with the oldest and hardiest sorts, if these plants have been properly managed in hardening them off (and we have seldom had a better season for this), they ought now to be in good condition for turning out, except, perhaps, in low, damp, or late situations. Make active preparations, therefore, to commence the work on the first wet day. If the beds have been dug over lately, and the plants have firm balls of earth about their roots, it will be better to plant more deeply than should be done in firm ground, as the fresh-dug beds will settle a little. Every plant ought to have a good watering at the time of planting, and if the weather is dry they will require to be often watered till they are once established; but recollect that "water often and little at a time" is one of the worst precepts of the old school, even with pot plants in winter, and still worse as regards out-of-door crops in summer. In nine cases out of ten slight surface-watering at this season does actual mischief, and plants are safer if left to take their chance than when submitted to such bad gardening. Remove the flowers and seed pods from American plants as fast as they become shabby, which will add materially to the strength of the plants. Give the beds a good flooding of water. The pegging and tying-out of the plants should be no longer delayed. Double Wallflowers, Mule Pinks, and some common Dianthus, Alyssums, Phloxes, perennial Iberises, and many kinds of dwarf Cistus and Helianthemums may be propagated under hand-glasses in a shaded situation, and will be found very useful next spring. Keep Auriculas free from weeds, occasionally watering and stirring the surface. Offsets may be taken off if rooted; place them round the sides of the pots in compost before recommended. When the seed vessels of Polyanthus are swelled, should any decayed bloom remain these must be removed, as they are liable to retain moisture to the detriment of the seed. Remove the awning from the Tulip bed, and let the flowers be exposed to the weather. When seed is not required break off the capsules. Do not neglect the beds because their beauty is over, but remove all weeds as they appear. After a shower, water with liquid manure between the rows of Ranunculuses. Do not wet the foliage. Unless Carnations are carefully tied the wind will break or twist off the shoots; worsted is the best material to fasten them with. As laterals are thrown out from the sides they may be pinched-off, in order to strengthen the other flowers. Let the stakes be put to the Dahlias as soon as convenient; when delayed much longer the root is often injured by the insertion of the stakes.

GREENHOUSE AND CONSERVATORY.

A mixed greenhouse is an indifferent place for ripening-off the growths of Camellias and Chinese Azaleas, and they should be removed to a close pit kept shaded in the middle of bright days. If there are spare frames or pits, all the Heaths and most of the other hardier greenhouse plants will grow in these far better than in the best-constructed greenhouse, and in that case the greenhouse can be converted into an intermediate stove, or a show house, where only plants in flower are to be kept during the summer. In the summer treatment of the conservatory three grand points have to be observed—viz., never to let the air become too dry, if possible, all the summer; to keep the house as cool as the weather will allow; and never to let the plants be crowded together.

STOVE.

Very many of the free-growing plants will now want another shift into larger pots, and as they must occupy more room you must remove some of the more hardy sorts to the greenhouse or some other place. Now and in the middle of winter are the advantages of an intermediate house, one having a temperature between that of a stove and greenhouse, most apparent; this is the most useful house that can exist about an establishment. Stove plants now require to have large portions of air, plenty of room, and as much light as the house will admit, in order to ripen their growth properly. Woody plants and large specimens should not be shaded, if possible, but all the

young stock may have some light shading thrown over the glass in the middle of the day when the sun is strong. See that none of the plants suffer from the want of water.

PITS AND FRAMES.

When the finer plants are brought into these you may keep them a little closer, and, probably, many of the plants will want a little shading in the middle of the day at first. After the pits are well watered in the afternoon give the whole a good sprinkling with the syringe, not, however, if it has been a dull cloudy day.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The rain of which there was a prospect did not come, and scarcely ever had we a drier week and warm as well. We have been forced to water some Peas that seemed as if they needed something, but by means of surface-stirring and mulching, as in the case of Cauliflowers, everything stood better than we expected, which was fortunate, as our water is becoming scarce.

Cleaning Tanks.—Sometime ago we were obliged to a correspondent for telling us of charcoal as a means of sweetening foetid water. We charred some large boles of trees, and placed them in the water, and they have much improved it; but as the water was getting low, we had the tank cleaned out, as it had a large deposit of rotten leaves, which had been blown into it in the course of two years. This tank receives most of the water from a range of sheds and glass houses. We preferred it to be open to keep the water soft, but the neighbouring trees have grown much since then; but for the softness of the water we would prefer a covered tank, as no leaves or rubbish can be blown into it.

We have another large reservoir of water not far from it, which will be very valuable until we have rain. That is merely dug out in the clay, and is supplied with the surface water that falls on the glass of pits and the gravel round them, the water being conducted in open culverts in the gravel to cesspools, whence it is taken beneath a road to this rough-made reservoir; the road itself being made on a slope, so that nearly all the water that falls on its hard surface finds its way quickly to this reservoir. Before we hit on this plan most of the water about pits, &c., found its way to dumb wells in the chalk 40 or 50 feet in depth. These wells took away the water until the chalk became slimed over, and then the water rose in the wells, and after heavy rains used to find its way to our stoke-holes, and caused the expenditure of much time and labour to wheel it out. By cutting off all such rain water from these wells, and taking it from hard surfaces to cesspools communicating with the pond-like reservoir, we keep our stokeholes dry, and have a large quantity of useful water, which, though it goes in muddy off the roads, soon settles down and clears itself. We are generally scarce of water every summer, but there need be no scarcity if we have tanks or reservoirs to collect what runs off hard roads or walks.

A good rain now would do wonders in this neighbourhood in garden and field. There have been heavy thunderstorms at no great distance. Those perched on a hill must expect often to see rains falling heavily in the valleys, whilst they are privileged with none, and hence in such cases water is to be husbanded if much is done in gardening. We can recollect of a small tap, and the half of a barrel standing beneath it, being all the means available for watering. Our tanks and reservoirs are now pretty fair, but we would rather double than lessen them. Just think of the water that might be saved when it pours along hard walks 3 or 4 inches deep! We have nothing to say against metal, stone, and other culverts, but for catching surface water on roads and walks nothing is so economical and so little observable as a shallow curve in the gravel, say 15 or 18 inches wide, and the centre 2 or 3 inches deeper than the general level, and which difference is rarely noticed unless when the rain water pours along to the cesspool, from which it is taken to the reservoir.

Circumstances compelled us to do more mowing than we intended, and the grass was at once taken to a place where we intend to do away with winter stuff, and have a trench cut out to assist Vegetable Marrows and Cucumbers. But for the pressing nature of the affair we would have had the trench cut, so as not to have to mow the grass, &c., twice; but as it is, the distance will be short. Let beginners bear in mind, that in utilising short grass it is best to use it rather fresh; it is very

unpleasant to work in a fermenting heap of it. The rankest dung is nothing to it. When used as it often is for linings, care must be taken that the steam and gases from it do not penetrate into the frame or pit. Its heat will keep tolerably equable a long time if it is duly mixed with long dryish litter.

Watering was the chief thing attended to, and that moderately, as unless when absolutely necessary we prefer surface-stirring and mulching.

FRUIT GARDEN.

Watered Strawberries out of doors that were coming into full bloom. From this they received only a tithe of advantage, as the sun was so bright; and no watering is like rain, as then we have the cloud and dullness along with it. With gentle rains the Strawberry crops promise well. Of some of the earliest kinds a few of the forward blossoms were blackened with the frost, but plenty remained to produce heavily.

Peaches and Nectarines out of doors, went over these, removing foretrot shoots, fingering where there were signs of fly, and giving a good lashing with the engine the first thing in the morning, as it is hardly safe to do so in the evening or the afternoon as yet. These trees, protected merely by a few twigs, are but moderately supplied—in some places thin, and in other places a thicket of fruit. Perhaps we hardly gave them so much attention as when we had no orchard house.

Orchard Houses.—We have been twice over these, and have not yet nearly thinned them enough. From the latest one the other day we took two bushels of small fruit of Peaches and Nectarines, and far too many are still left; but the Peaches when a little larger will be useful, and will do little to distress the tree until the stoning has commenced. From what has lately been said by Mr. Brabant and the inquiries of several correspondents, we are induced to say a few words on thinning, and first on *thinning flowers*. We did nothing in that way this season, and could hardly have found time if we had desired to do so. We felt sure that many more would set than we wanted, and resolved to wait until then for thinning. We have found thinning the blooms of much value under two circumstances. First, when there was a great display of bloom buds, and yet we had reason to fear that the wood was green and imperfectly ripened. In such a case the removing with pointed scissors or a sharp-pointed knife the side and more backward buds, left a greater share of the more matured sap for the diminished buds, and setting was a matter of more certainty. The second case in which thinning was even more effectual was in that of old trees, and where we had reason to believe that the action of the roots was rather in arrear of the swelling and expanding of the buds. In such a case we have known trees that had their fruit buds thinned set well and ripen their crop well; whilst when left thick, as they showed, they either set imperfectly, or, if they set thickly, they often afterwards gradually disappeared, dropping off by degrees until few or none were left. It seems to be at the early stage in such a case that nourishment is scarce, and that is more effectual when directed to few channels instead of many. As the season advances and growth becomes more luxuriant there seems then to be no difficulty in getting the fruit to swell. The hitch is just at the setting and afterwards. In the case of old Noblesse trees we repeatedly found that leaving the tree to itself was followed by a meagre crop, and a good crop was the result of a free thinning of the bloom buds, leaving the best-placed. When trees are moderately healthy and not too old, or the roots too deep, and the wood fairly matured, as in orchard houses, the thinning of the blooms may be looked upon as a substitute for so much *thinning the fruit*, and therefore may be dispensed with by those who like to see clusters of young fruit like ropes of onions. It would not be advisable to leave these thus thick and too long; nevertheless it is not bad policy, after a little thinning, just to wait a little and see what fruit is disposed to take the running, and then prefer that to the smaller ones. We may thus bring in the principle of natural selection to assist us in thinning. The chief point is not to wait so long as to get the trees exhausted with a lot of fruit that must be removed. We find this waiting plan a good one with Plums, as many of them after seeming to set will drop, and it is as well to see which takes to swelling freely before we thin much. On this account we do not care much to thin Plum buds, even of trees in pots, and a very heavy crop of Plums does not seem to distress a Plum tree so much as an overcrop the Peach. As a general rule, however, a fruit tree will not be overtaxed with impunity. To fill a gap we greatly overcropped a rather old Vine last season, but it will nearly require this season to recruit its exhausted energies.

In such weather all trees in pots and Strawberries in pots required a great deal of watering. When Strawberry pots can be set on the ground, as in the front of our orchard houses, it is a good plan to set them on fresh turf reversed, with just a sprinkling of leaf mould to make it level for the pots. Some thus set when removed were found to have their roots firmly imbedded in, and traversing more than a square foot of turf. There is no standing water in such a case, as in a saucer.

Opportunity was taken in the morning to thin Grapes and regulate Vines, and in the late vinery we have removed most of the plants, and as we could not keep the Vines back more without injuring the bunches, we will regulate the ventilation, and give fire heat to keep it warmer as the Vines come into bloom—the time when those in late cool houses need the help of a fire most, especially in dull weather. The other time when a little fire heat is most useful for them is in winter, when dryness and airiness are essential to the good keeping of the Grapes. We use little water in the way of syringing Vines, but we like to give them one lashing after the first dressing, removing extra shoots, &c.; but Peach trees we syringe frequently, though our water is not so pure as we would wish for that operation, and therefore we content ourselves chiefly with damping the paths and floors.

In the Peach house, of the four lines of Strawberries we have removed the highest one over the pathway at back, as it was shading the back wall, and a plant or two was showing signs of the red spider. It is always advisable to avoid mounting ladders for watering as soon as possible. The Strawberries on that shelf, so close to the glass, would have been apt to suffer from red spider in such scorching weather had we not for the space of 18 inches opposite the shelf dulled the glass with whitening. We also removed to a pit a fine row of Strawberries at the top of the late vinery just referred to, where they would have swelled very well, but they were becoming too shaded to be well flavoured, or even bright-coloured. We have heard Strawberries spoken of as being watery, &c., when the gardener had no place to ripen them, except under the shade of other things. They will swell there, but they will not be high-flavoured. After putting Strawberries in every imaginable place, we question much now whether giving them a handy house or pit to themselves is not on the whole the most economical and the best in every way. On the shelf referred to the berries were swelling nicely, but they were soft and watery owing to the shade, and of course the labour in moving them cost something. The firmest and best Strawberries we have had this May were ripened in the open air from pots, the fruit being nearly ripe before setting outside in a sunny place. In firmness and flavour the berries were superior to what are generally grown and gathered with out-door treatment. To have the best flavour Strawberries should be gathered when the soil is comparatively dry. Even out of doors we have gathered and kept them thinly spread out before rain came on. The same kind of Strawberry gathered out of doors in sunshine, and after rain, is quite different in flavour.

ORNAMENTAL DEPARTMENT.

Work outside has been heavy, and we shall be busy in making ready beds and borders for bedding plants. We always advise taking these matters easy; nothing is gained by planting before the ground is moderately warm. We again reiterate our old advice, Dig down plenty of sunbeams before you begin to plant out. About the 22nd of May last year many of our readers lost thousands. We had not a plant out, and therefore lost not one. Our plants are mostly in the ground, exposed, but capable of being protected in a moment, and are growing with little trouble where they are. Being in the earth they need little in the way even of watering, and when removed will scarcely feel the moving. Partly by necessity, as our ground is not yet ready, and partly by choice, because we attribute so much importance to the airing and turning of the soil, we will for a few days be more anxious to have the ground in good order, than to put the plants out so early. Some years ago a friend of ours turned out strong plants of Verbenas in the middle of April, and a considerable amount of trouble was required in protecting them with twigs afterwards. We turned out plants not better—hardly so good, in the last week in May; but before the end of June our plants were in every way far in advance of the early-turned-out plants.

A few words now to those who will, however, plant early. If you wish for immediate effect plant thickly, even if you should afterwards have to cut the half of them out. If you chiefly aim at autumn effect plant much more thinly. For instance, in the first place we would plant fair plants of Tom Thumb Pelargonium from 6 to 9 inches apart. In the latter

case we would plant from 12 to 15 or 18 inches apart. In dry weather, such as still threatens to continue, give water merely around the roots, and keep the dry soil to the surface; and if the leaves are distressed at all, syringe them instead of deluging the soil with water, and thus cooling it immediately.—R. F.

COVENT GARDEN MARKET.—MAY 20.

SOME good English Peas have made their appearance. Prices continue the same as last week.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples 1 sieve	3	0	5	0	Melons each	8	0	15	0
Apricots doz.	2	0	4	0	Nectarines doz.	0	0	0	0
Cherries lb.	3	0	5	0	Oranges 100	1	0	7	0
Chestnuts bush.	0	0	0	0	Peaches doz.	24	0	42	0
Currants 1 sieve	0	0	0	0	Pears (dessert) doz.	0	0	0	0
Black do.	0	0	0	0	Pine Apples lb.	8	0	10	0
Figs doz.	12	0	18	0	Plums 1 sieve	0	0	0	0
Filberts lb.	1	0	0	0	Quinces doz.	0	0	0	0
Cobs lb.	0	9	1	0	Raspberries lb.	0	0	0	0
Gooseberries quart	0	6	1	0	Strawberries per lb.	4	0	10	0
Grapes, Hothouse, lb.	8	0	12	0	Walnuts bush.	10	0	14	0
Lemons 100	8	0	10	0	do. per 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	3	0	4	0	Leeks bunch	0	3	0	0
Asparagus 100	3	0	8	0	Lettuce per score	1	0	1	6
Beans, Kidney 100	1	6	0	0	Mushrooms pottle	0	9	1	6
Beet, Red doz.	2	0	3	0	Mustd. & Cress, punnet	0	2	0	0
Broccoli bundle	0	9	1	0	Onions per bushel	8	0	5	0
Brus. Sprouts 1 sieve	0	0	0	0	Parsley per sieve	3	0	4	0
Cabbage doz.	1	0	1	6	Parsnips doz.	0	9	1	0
Capsicums 100	0	0	0	0	Potatoes bushel	4	6	5	6
Carrots bunch	1	0	0	0	Kidney do.	4	0	6	0
Cauliflower doz.	3	0	8	0	Radishes doz. bunches	0	6	0	9
Celery bundle	1	6	2	0	Rhubarb bundle	0	4	1	0
Cucumbers each	0	6	1	6	Savoy doz.	0	0	0	0
Endive doz.	1	0	0	0	Sea-kale basket	0	0	0	0
Fennel bunch	0	3	0	0	Shallots lb.	8	0	9	9
Garlic lb.	0	8	0	0	Spinach bushel	2	0	3	0
Herbs bunch	0	3	0	0	Tomatoes per doz.	3	0	4	0
Horseradish bundle	3	0	5	0	Turnips bunch	0	4	0	6

TRADE CATALOGUES RECEIVED.

J. Westley, Floral Nursery, Blisworth.—*Descriptive Catalogue of Bedding Plants.*

E. G. Henderson & Son, Wellington Road, St. John's Wood.—*Catalogue of Bedding and Softwooded Plants, New Plants, &c.*

TO CORRESPONDENTS.

.. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix upon the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

BOOKS (E. W.).—The Garden Manual may suit you. You can have it free by post from our office if you enclose twelve postage stamps with your address. (A. W. L.).—There is no work upon the culture and uses of herbs.

ACUCRAS (W. Wormold).—The flowers were male.

MONSTROUS GROWTH OF ROSES (J. Subscribers).—Roses throw up wood growth in the centre of the flower and chiefly from two opposite causes—poverty, and over-luxuriance from excessive manuring; sometimes, also, from there being too many flowers on a plant. The Strawberry blossoms seem blackened by frost. The first on the 7th affected some with us in the same way.

STRIKING DOUBLE WALLFLOWER CUTTINGS (J. L.).—Cuttings of double Wallflowers may be inserted now in sandy soil under a hand-light, in the open air in a shady place, or in a pot kept shaded a little until growth has commenced.

SULPHATE OF LIME (T. Catechpool).—As a garden manure it has been found useful sown over lawns, but is also beneficial to Turnips and Potatoes sown over the surface, and dug in before inserting the crop; 3 cwt per acre is sufficient.

MUSHROOM CULTURE (J. Subscribers).—We have a little much on Mushroom-growing that we must at present be brief, referring to previous numbers and volumes for variety of material, form of beds, &c. The best way of making a bed depends on the materials. We have just formed one in an open shed of 15 inches deep of litter dung, well trodden, and 3 inches of horse droppings on the top. The best material is horse droppings with a little short litter in it, moderately dried before making the bed, and in that case from 12 inches thick will make a good lasting bed. This, well beaten, shon't be spurned when it is put on the bedline

and about 85°. The spawn should be inserted just beneath the surface, in pieces the size of walnuts, or a little larger, and 9 inches apart. When the heat is stationary, not rising, cover with 1½ inch of rather stiff soil, beat firmly, and leave with a smooth surface. Cover with a little hay or litter to keep the soil uniform in heat and moisture. A shady place, a shady shed, a cellar, &c., will be better than a house in summer. In winter and spring the best heat is 60° to 80° in the bed, and 55° to 60° in the house, and from the time of spawning you may expect to gather in six or eight weeks.

GRAPE SPOTTED (L. M. C.).—The berries are severely attacked by the spot—an ulcer as called by gardeners. Three out of every four of the berries should have been cut away as soon as the size of No. 4 shot. The roots are unable to supply sap to them in sufficient quantity. Remove every berry as soon as the spot appears in it, and thin the berries of all the bunches severely. If the roots are outside theinery, cover the surface with fermenting dung.

GRAPE REMAINING ON THE VINE (Reader).—The hanging of late Grapes, say until March, does nothing to prevent the wood ripening, and so far as we can judge, after many years' practice, does nothing to enervate the Vine. The Grapes hanging on the Vine receive enough of juice to keep them plump from the slow action of the sap of the Vine; but if kept until the spring flow begins to rise, the berries of the bunches would crack and decay. In moderately late Vines the Grapes are cut before there is a chance of bleeding; but in very late Vines, where bleeding would be likely to follow from cutting late, the Grapes may hang before the sap rises vigorously; but before then the Vines should be disbudded, say by February, leaving only the buds wanted, but in that case the Vines must not be cut until they are in full leaf. We have done this frequently, and with no result, and with no bleeding. Of course it would be as well for the Vines if the Grapes were cut when ripe, but the above will show that the Grapes may hang long and yet the Vines not suffer. In unforced houses there will be no danger of bleeding if the Vines be cut towards the end of February. The Vines will move little if the temperature is not higher than from 40° to 45°.

PRUNING (Idem).—The whole question of pruning and curtailing growth lies in a nutshell. Where there is abundant room we may with every propriety allow more free growth; but when we wish as much fruit as possible in little space on a tree, then we concentrate the fruitful energies of the plant so as to produce fruit buds instead of mere growth. We have never met with the proofs that the fruit spur of an Apple or Pear tree is formed in one season, blooms the second, and fruits the third. In many cases by pinching shoots we have clothed the lower end of this season's growth with buds that bloomed and fruited in the following season, when shoots not operated on had nothing from point to base but wood buds. What are fruit buds, rarely burst as wood buds only, if the fruit bud was matured. This is often only imagined to be the case, when the fruit bud has perished, and the wood buds near it have thus obtained more vigour than they otherwise would. Except in such cases, fruit buds will develop into blossom, and it is equally rare, that "ordinary" leafy buds apparently open in bloom." Of course, seasons, &c., do much, but still can also do something, and hence practical experience is better than mere theory, though both are good if kept in their own place. It is not only in stone fruit, but in almost every other kind of hardy fruit, that the same fruit bud does produce fruit only once, but others are produced near it, and the noobservant come to the conclusion that the same bud continues to produce. Singular exceptions often happen, but these do not make a rule. We once transplanted a large espalier Apple tree, and though it had plenty of fruit buds, it did not open a fruit bud, or even a wood bud, for not a single leaf did it present the following summer. Nevertheless, we found there was enough of movement of sap to keep the tree alive, as the bark kept fresh and green when cut. The tree was transplanted about Christmas, and it took a whole twelve-month's rest, not producing a single leaf, but it broke at the usual time the following year, expanding both fruit buds and wood buds, and produced more than half a bushel of Apples. We should not expect such a result in general circumstances. We do not exactly see what you are aiming at in the somewhat singular questions you propose as to vegetable development, and we fear we can give little explanation of the phenomena without going deep into phytology.

FUMIGATION (D. H.).—The "Tobacco grains" used were those advertised by Mr. Pooley, Sussex Wharf, Wapping, London. We cannot say how they are prepared.

GRASS-EDGING CUTTER (J. W.).—Any of the implement makers who advertise in our columns could supply you. Write to them for particulars.

FLOWERING DOUGAINVILLEA GLAURA (T. M.).—We do not think the plant will flower in June. Being large it may do so if you have secured a good growth, and now expose it fully to light and keep it dry for a fortnight; but if it is now growing freely we hardly expect you will see it flower before August, if then. Secure a good growth, expose that growth to the full sun, give abundance of air, preserve a dry atmosphere, and give no water at the root so long as the leaves do not flag. Bottom heat is not necessary. The temperature may safely be 55° at night, and 70° by day without sun, and from 80° to 85° with sun and abundance of air.

STEPHANOTIS FLORIBUNDA (J. D.).—Stephanotis floribunda would not succeed trained over wire basketwork in a sitting-room. It is a stove plant. We would employ *Ipomoea hederifolia*, which is not so common as it deserves to be.

SELECT VARIETATED IVIES (Idem).—It is hard to tell which are the best two variegated Ivies, as taste differs considerably. *Hedera helix marginata argentea* is a fine silver-margined sort, and *Hedera helix aurea maculata*, a golden one. Two others equally good are *H. helix alba lutescens*, and *H. helix minor lutea*. We prefer the small-leaved sorts, two of them are *Cullisii* and *palmata aurea*.

STRIKING ROSE CUTTINGS (Idem).—The proper time to make Rose cuttings is directly after the flowering is past. The wood is then ripe, and the cuttings root freely and safely if put in before the shoots have commenced to grow.

TREATMENT OF RHODODENDRONS AFTER FLOWERING (Agnes).—The flower trusses as they fade should all be broken off between the finger and thumb. In this way the plants will not be weakened by the production of seed, and will bloom better in the following year. Give the plants thorough waterings in dry weather, and mulch the surface of the beds with the mowings of the lawn to the depth of 2 or 3 inches. All this should be attended to at once.

HARDINESS OF ILLICUM RELIGIOSUM (F. G.).—It is not hardy except in a warm situation in the south of England. A wall with a southern aspect and protection in severe weather would probably suit it.

STRIKING BANKSIA AND GRUVILLEA CUTTINGS (Idem).—Cuttings of these will succeed without bottom heat if covered with a bell-glass and kept close and shaded, and in a house where there is a temperature of 70°.

DURATION OF CLIANTHUS DAMPieri (Idem).—This *Clianthus* is the same with you as with us—viz., a biennial. It is generally accepted as a perennial, but it does not succeed with us from cuttings, nor thrive well after flowering once.

TULIP TREE BLEEDING (A. F.).—As the bark has the appearance of being burnt, we should think the tree had received a blow, or that the bark has been otherwise damaged, hence the bleeding. If the scar were caused by canker there would not be any oozing out of the sap. We do not think it will destroy the tree, but we would at once cut out the damaged portion of the bark quite into the quick, apply Thomson's styptic to the whole of the wound, and continue the application until the bleeding stopped, then cover the wound with grafting wax made of Burgundy pitch, 1 lb.; common pitch, ½ lb.; beeswax, 3 ozs.; and mutton suet, ½ oz., melted and put on with a brush while warm. It should be made to cover the edges of the bark, and should be repeated at intervals so as to stop any cracks.

WATERING STRAWBERRIES WITH LIQUID MANURE (K. F. A.).—It is of great benefit, and may be given once or twice a week after the blossoming is over until the crop is gathered, more especially if the weather be dry.

RIVINA LEVIS (F. D.).—This is a dwarf-growing shrub of no great merit as a flowering plant, but attractive by its orange berries. It is not so good as *R. humilis*; the latter has white flowers, the former pale pink flowers. It is of very easy culture, requiring a compost of light turfy loam two-thirds, and one-third leaf mould, with a free admixture of sharp sand. It succeeds in a cool stove, having a light and airy situation. It is not worth a place in a small collection unless grown for a particular purpose, or for its berries, which are pretty on a well-grown plant. It is readily increased by seeds in a hotbed.

REMOVING FRUIT TREES IN SEPTEMBER (H. O.).—You may safely remove all the trees and bushes you name at the end of September, taking care in removing to preserve as much of the roots as possible, and not shaking off more of the soil than that which falls away readily. Any adhering should be retained, and the roots ought to be protected as much as possible from sun and air. Plant again without delay, and give a good watering.

PROPAGATING WHITETHORN (Idem).—It is raised from seed. The haws should be gathered and put into a pit the same as Potatoes, only in a thinner layer, and covered with soil. They remain thus a year and are then sown in beds, November being a good time. The seeds germinate in spring. Thorns do not come well from cuttings. The seed does not vegetate until the second year.

PEAR-TREE BLOSSOMS NOT SETTING (Idem).—The flowers may have been destroyed by frost. If not, we think top-dressing with manure or rich compost, and giving thorough supplies of liquid manure in dry weather would assist setting.

SPROUTING BROCCOLI (A Subscriber).—The Purple Dwarf and Tall Sprouting Broccoli supplied by the firm you name are the sorts recommended in our number of April 23rd.

PANSY (Viola).—The flower you enclosed was very shrivelled, but not so much so as to prevent our discerning the colours. They are not unusual, and run too much into each other.

MUSHROOMS TOO THICK (—).—We have several times been obliged to use less strong manure, as the Mushrooms became too thick to be easily cooked. We presume that is what you mean by having the Mushrooms nearly all pith. If too thick to fry cut them in slices and they will answer very well, but will not look so well as thinner Mushrooms with plenty of pink laminae or gills beneath. Use more litter with your droppings and manure, and the Mushrooms will be thinner. We see no particular spot on the Cucumber leaf, except scorched spots made by the sun striking on the leaf when still damp. You may have the disease called "spot," but we did not perceive it. Give air early, and leave it on all night at present.

FLOWER GARDEN PLANTING (R. G. H.).—The finest bed of *Coleus* we ever saw was at Woburn, and it was edged with *Cineraria maritima*. We saw the same bed edged with Mrs. Pollock *Pelargonium*, fine, but not equal to the former, for the *Cineraria* made such a chaste finish. Your Cloth of Gold *Pelargonium*, and *Lobelia* banded between it and the *Cerastium* outside, would do well; but so far as we can judge, nothing equals the *Cineraria*, or the white-leaved *Centaurea* next the *Coleus*; but, of course, it is well to try different plants.

BARBE DE CAPUCIN (Old Subscriber).—This, the blanched leaves of Chicory, may be produced in many different ways, all that is requisite being to keep the roots in a dark place with a temperature of from 50° to 60°. Seed may be sown from April to July, and the culture may be the same as for Endive. The French, according to Thompson's "Gardener's Assistant," adopt the following modes of treatment—"The seed is sown thinly in April or May. In November or December, one or several beds of light sandy soil, or well-decomposed dung, about 2 feet in width, and 3 inches thick, are formed in a cellar. On these is placed a row of Chicory roots laid on their side, with the crowns outwards; next comes another layer of earth of the same thickness as before; then another row of roots, and so on. The mild and equal temperature of the cellar, and the want of light, soon occasion the production of blanched leaves, which are cut as soon as they have attained a sufficient size. Water must be given as required, if the soil used is too dry. Near Paris, a more expeditious method is pursued; beds of hot dung are made up, and the roots of chicory, tied up in bundles, are placed in an upright position upon the beds, and watered from time to time, so as to keep them moist. Another method of blanching without taking up the roots, consists in sowing in drills from 6 to 8 inches asunder, and covering the Chicory in February with 4 or 5 inches thick of earth, or with double that thickness of leaves. In three weeks or a month afterwards, according to the season, it pushes, and as soon as it appears above the additional soil or leaves, it is cut over by the original level of the ground. In this way the leaves are very white and tender. Another mode of blanching consists in

boring holes in a cask with an auger, in rows 3 inches asunder, and filling it up with alternate layers of sand and roots, with the crowns protruding through the holes. The cask is then placed in a dark cellar, and the sand is then moistened if it becomes too dry. In this way several cuttings of blanched leaves may be obtained till the roots are exhausted. This method is sometimes adopted on board of ship."

ERECTING A PINE PIT, &c. (A. Francis).—We must give you the same modified answer as we gave to another correspondent in page 192. To make the most of such a house, 30 by 12 feet, you might have the front wall 4 feet high, and the back wall 9 feet high, and a path of 3 feet at back, with shelves against the back wall. The bed would occupy the whole front, 2 feet high in front, and 2½ feet behind. What would be more convenient would be to have a path 2½ feet wide all round, and a bed of 7 feet wide in the middle, then the front wall from the floor would be 6 feet, and the back wall 11 feet high. The first plan would afford most room for the Pines, but you could not get at them so well; but by sinking 2 feet as you have done, your front wall would only be 2 feet above the ground level, so that by tilting the sash you could easily reach the plants in front. For a fixed roof it will be best to have the bed in the middle of the house. For such a house we would advise you to have hot water instead of flues, and the simplest plan would be to take three flows for top heat and return them under the bed for bottom heat.

TORREYA GRANDIS (T. C.).—This is a Taxod or Yew-like tree, and perfectly hardy, but of slow growth. It would be interesting to know what soil it succeeds best in, and whether it has been proved hardy everywhere.

POTTING AND DIVIDING MAIDENHAIR FERNS (M. H.).—The best time to pot them is when they are beginning to grow; the ball may then be reduced to any extent necessary to get it into a smaller pot, or if the plants are large they may be divided at the time of repotting. March is in general the best time to divide the plants; but this operation may be performed at any time if a good quantity of soil be preserved with each division. It is not advisable to pot Ferns in the autumn.

BIRD'S-NEST FERN BLACKENED (Idem).—Your plant is not kept sufficiently warm. Give more heat and avoid syringing over the fronds; it is impatient of water on them whilst in a young state, and condensed moisture frequently causes their disfigurement. Keep the plant near the glass, but shaded from bright sun, and maintain a brisk heat of 55° at night and 75° to 80° by day, with plenty of moisture, but not over the fronds. Afford a moderate amount of air, but avoid cold currents.

MAKING A WOODEN ROOF WATERPROOF (A Constant Reader).—We presume the boards forming the roof overlap each other to some extent, and in that case they will only need to have two coats of boiling pitch and coal tar, 1 lb. of common pitch being added to every gallon of coal tar. Apply with a brush and sprinkle the roof lightly with dry sharp sand, and the wood must be dry, otherwise the pitch and tar will not adhere. Unless the wood be dry and well seasoned it will crack and let in the wet, therefore such roofs are generally covered with the felts made for the purpose.

APHELANDRA PORTEANA CULTURE (Titmouse).—This plant requires a stove temperature, and that may be from 55° to 60° at night in winter, and from 65° to 70° by day; in summer the temperature should be from 60° to 65° at night, and from 75° to 80° by day, and higher with sun and air.

A position near the glass is essential, likewise a fair amount of ventilation. It succeeds in a compost of one-third turfy sandy peat, two-thirds fibrous loam, and a free admixture of silver sand and pieces of charcoal from the size of a pen up to that of a hazel nut. Provide good drainage, remove all the old soil parting readily from the roots, and use a pot rather small for the size of the plant. The potting should take place in March, and a moist heat with a close atmosphere should be maintained until the plants become re-established. Water sparingly until the roots are working freely in the fresh soil, then water more freely, but be careful not to over-water at any time, and do not give any until it is required, at the same time do not allow the foliage to flag from the want of water. If bottom heat is at command the plant will be much benefited by being plunged in it for some time after repotting. If the plant grow well shift it into a larger pot in June. When the plant flowers it should be well supplied with water until the bloom is past, then keep it dry, and afford a season of rest, cutting the plant down, and when the new shoots are a few inches long repeat. If the plant do not flower be careful not to saturate the soil with water, but give no more in winter than is sufficient to keep it in a healthy state, but dry rather than wet. Afford abundance of light and air.

LESCHEAULTIA CULTURE (Idem).—A cool airy greenhouse, and a position near the glass without shade are requisite. Use a compost of fibrous sandy peat with about one-sixth of silver sand, and the same proportion of charcoal broken, and not larger than a hazel nut. Good drainage should be given, and the collar of the plant ought to be kept rather high in the centre of the pot. In potting be careful not to injure the roots, and remove no more of the old soil than that not occupied with the roots. The size of the ball will determine the size of the pot to be used, which should only admit of a little soil being added all round the ball. Pot rather firmly, but not very tightly. Water sparingly until the plant has recovered from the potting, and then give more copious supplies, but avoid heavy waterings. If the plant is young it may be potted in June, the first potting taking place in March; but if an old plant the time of potting will be regulated by the time of flowering, the plant being rested for awhile. Cut in any irregular growths before repotting. Young plants should have all irregular growths stopped up to July, when stopping should be discontinued. From June to October the plant will do better in a frame or pit than in a greenhouse, the pot being set on coal ashes, and abundance of air given, especially at night. Be careful not to over-water in winter, and keep the reverse of a moist, close atmosphere, affording a position near the glass and plenty of side room. It will be sufficient if frost be excluded.

GRAVEL ON WALKS NOT SETTING (Idem).—Your gravel is too loose from its being free from clay or loam. We do not know of anything so likely to make it bind as to sprinkle it with some loamy sand, and after the first heavy rain roll well with a heavy iron roller. Roll frequently whenever the weather is wet. We think a good rolling would make it firm.

NAMES OF PLANTS (T. J. L.).—We cannot identify plants from their leaves only; we must have flowers. (*J. T. B.*)—*Thalictrum alpinum* (Alpine Meadow Rue). (*J. E. P.*)—*Orchis morio*. (*E. G. R. F.*)—1, *Saponaria ocymoides*; 2, *Saxifraga aizoon*; 3, *Garden Phlox*; 4, *Euphorbia cyparissias*; 5, *Geranium pratense*; 6, *Potentilla geranioides*; 7, *Cerastium grandiflorum*; 8, *Saxifraga hypnoides*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending May 19th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 13	30.163	30.093	70	38	55	53	N.W.	.00	Clear and fine; very fine; very dark, fine.
Thurs.. 14	30.250	30.113	72	38	55	53	S.	.00	Cloudy; overcast; fine at night.
Fri... 15	30.214	30.088	75	46	57	53	S.W.	.00	Bright sunshine; very fine; fine at night.
Sat... 16	30.077	29.988	70	44	57	53	N.E.	.00	Overcast; densely overcast; very fine.
Sun... 17	30.076	30.017	71	44	57	54	S.E.	.00	Cloudy; overcast; very dark, rather boisterous.
Mon... 18	30.077	30.038	76	44	57	54	E.	.00	Hazy; clear and fine; fine at night.
Tues.. 19	29.944	29.891	87	44	57	54	N.W.	.00	Very fine; very hot; very fine; heavy clouds.
Mean	30.114	30.024	74.43	42.57	56.43	53.43	..	0.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GAME FOWLS.

ADVERTING again to the two articles on Game fowls in the number of the 23rd of April, the writer of the first of these seems to hint that I prefer a feathery bird with a broomy tail, whereas, on the contrary, I advocate a short, close, hard, and scant feather, both in body and in tail. A great many good cockers' birds, with the open or spread tails carried high have the very hardest and shortest feather, and good feather is not at all confined to the birds with the drooping, falling, Malay-like tails. The true type of the old English cocker's Game fowl is best seen in and near Manchester, Wolverhampton, and London, at which places the birds are of a different type from our large, heavy exhibition birds, being smaller, harder, and of greater endurance. These birds have, in general, neat short tails, carried well up and open or spread; the sickle feathers with a short curve, and not nearly straight, as in some exhibition strains. The extreme type in the latter birds puts one rather in mind of the Malays. I maintain that the very best

birds are to be bred from the best cockers' strains just named, and not from the large, heavy birds.

The present type of our exhibition birds is one made of late years expressly for exhibition, and unlike the old style of bird in their increased size and weight; and great attention is paid in breeding them to very scant feather and to the form of tail, which latter point is the least important one in a fighting bird, so long as the tail is not feathery or broomy, with a lot of curved "side streamers" in addition to the "leaders," which is very bad, as every judge well knows, and none better than I do myself as an old breeder.

I have already stated that the "whiptailed" are the favourites at exhibitions, being considered neater birds; but cups and prizes at exhibitions are not in all cases a guarantee of thorough gameness, though some exhibitors seem to fancy that they are. The form of tail that I prefer is not so very essentially different from the usual form of tail in prize birds, but I like tails more open, carried higher, and more sickled than the extreme exhibition type of the whip tail. I well know that many whiptailed birds are good and fast birds; but still I am convinced that, as a general rule, "a drooping tail shows a drooping spirit" in a Game fowl, and such tails have the feathers falling together too much, and do not show the proper shape of the

tail. I like to see the whole of the tail boldly shown out, and not concealed by its falling together in feather, as if half the feathers were plucked out, or wet with rain, or as if the bird were cowed. Exhibitors will, however, of course, keep to their own tastes as to tails, and I shall also retain that which I prefer as having a more thoroughly English appearance.

As to the yellow-skinned, willow and yellow-legged exhibition strains, every one must allow them to be the handsomest birds of all as to colour, and the only birds that possess the true "golden-tinged red" plumage; but beauty of colour is not gameness, and the white-skinned birds possess a superior share of endurance and courage to the yellow-skinned, which are all too soft in their nature, as the old cockers well knew. I have already stated elsewhere that the yellow-legged Piles, if red-eyed, are both good and quick birds, and are undoubtedly the handsomest Piles of all; but they are known not to be equal to white-legged Piles, when the latter are well bred, in either courage or endurance. Again, some exhibitors fancy that their willow-legged Black-breasted Reds are first-class fighting birds; they may become so if crossed with Brown Reds and other good colours for the pit; but when pure bred very few willow-legged Black-breasted Reds are real hard cockers' birds, and cockers seldom breed this colour at all. In and round Manchester, Wolverhampton, and London you will seldom see any but blackish-legged, dark-combed Brown Reds and Dark Greys, and white-legged Black-breasted Reds with the light wheaten hens. These are the true cockers' birds, are all white-skinned, and seldom have the drooping Malay type of tail at all, but have open tails. Pure-bred willow-legged Black-breasted Reds are in general inferior in courage to all Game fowls, except to the yellow-skinned sorts with yellow eyes, which are the worst Game fowls; these willow-legged Black-breasted Reds being much inferior to the Brown Reds in courage, and also to Dark Greys, Piles (white legs), good Ginger Reds, good Red Duns (white legs), and to good Whites (red eyes, white legs), and also to the blackish, carp brown, and white-legged birds of their own colour. The blue-legged breeds of Game fowl, though white-skinned, are inferior in general to yellow-skinned exhibition birds, and stand about the last, or nearly so; but there are exceptions to all these rules, and some strains of all colours prove good at times. Red-eyed blue-legged Red Duns and Duckwing Greys are often very good quick hard birds, and I think Westmoreland has some very good blue-legged Game fowls.

To the names of breeders which I gave before, I add, to show the type of exhibition birds that I admire most, the following—viz., Mr. Fletcher's Brown Reds, Piles, and Duckwings; Mr. Charles Challoner's Brown Reds, Piles, and Duckwings; Mr. Harry Adams's Brown Reds and Piles (not now an exhibitor); Mr. Aykroyd's Brown Reds and Duckwings.

I have already stated that I like the blackish-legged dark-combed Brown Reds of these strains, and the white-legged Piles better than the yellow-legged for gameness; also that I think Mr. Statter's the best Brown Reds of all, and Mr. Brierley's and Sir St. George Gore's the best Black-breasted Reds. Such as these are the style of birds that I would award prizes to, and in addition to these I might name Mr. Burgess's Game fowls, also Mr. Billing's, and Mr. A. B. Dya's Brown Reds, though I have not heard quite so much of the birds of the last-named exhibitors as of those of the others that I have mentioned before.

As to Game cocks breaking out of their pens and fighting, it is so common an occurrence that it is scarcely worth notice, and penning always inclines them to be fierce and quarrelsome when near each other. If good quick birds they would, of course, kill one another in a few minutes, instead of injuring each other, as two farmyard cocks would do, or two great Malay cocks. The cockers' strains at the places I have mentioned are the true pure-bred Game fowls, and not the great heavy half-bred Malay things, that one may often notice at some of our exhibitions.

I think a Black-breasted Red cock, perhaps of Sir St. George Gore's strain, which took a first prize, was about the best bird at the last Birmingham Exhibition. All will easily admit that the red-combed red-faced strains of Game fowls possess far more beauty than the gipsy-combed, smoky-faced breeds, but the latter are well known to be harder and gamer, and will stand more steel than any red-combed birds. Besides this, gipsy combs and faces are the proper and original type in Brown Reds, Dark Greys, Dark Birchens, and some Black Game fowls. For beauty of colour I have always preferred the red-eyed red-combed strains, more especially Black-breasted Reds, and

Piles, with yellow (1) and willow (2) legs, both red-eyed. As to the beauty of tails, all broomy side-feathering in them is very bad-looking indeed, as all fanciers of Game fowls know, and drooping wings in Game fowls would be ridiculous. I should have said before, that willow-legged Duckwings have in general also proved gamer than willow-legged Black-breasted Reds.

I quite agree with "YORKSHIRE" as to my remarks on Game fowls being rather opposed to modern exhibition ideas, and being as such rather "old-fashioned," but I cannot see that they are in the least prejudiced. The present style of exhibition birds on the average I consider to be decidedly inferior both in gameness and quickness, also in endurance, to the old style of bird, and I do not think they are so "deep game" as the average of the best old cockers' birds. Cock-fighting reached its zenith about 1825 or 1826, and birds have been less game I fancy ever since 1832. Well-matured progression in breeding is all very well, but by crossing different colours together I think breeders rather retrograde, and obtain mongrel mixtures, though I highly approve of crossing different strains of the Game colour, which is the way to approach perfection.

The willow-legged red-combed Brown Reds are, of course, finer in colour than the old true bred gipsy-combed blackish-legged breed, but for courage and endurance are inferior, though fast birds at times, and are too soft in flesh. The darker Brown Red hens are the better, as long as the dark brown colour is perfectly distinct from any Black; and the more gipsy the comb and face, the more perfect in blood are such hens, and the cocks fight best. The old Shropshire Reds, I have heard, were the best birds of their time in all qualities, and were quick and not slow, though not so quick as the Cheshire Piles were. Crossing them with Black-breasted Reds and Duckwings made them slower, though redder in colour; the cross with the Cheshire Pile (white legs) made them quicker and redder in colour, and lighter also, and gave them the white nails. Undue size and legginess clearly result from the very objectionable Malay cross, which is more particularly observable in some of the strains of the large Nottinghamshire Black-breasted Reds, with long willow legs.

The articles in THE COTTAGE GARDENER in 1857, almost entirely refer to exhibition birds, and to beauty of colour, and not to gameness, or to the old style of bird, and the yellow and willow-legged breeds, undoubtedly, stand first of all for beauty of colour, and almost exclusively possess the true "golden-tinged red colour" in their Red breeds; but beauty of colour is not what the old cockers required.

The articles contributed by me since September 18th, 1866, tend to recall to recollection the older and gamer style of bird, and refer less to the now well-known exhibition-type of bird about which it is scarcely worth while to write very fully. No doubt the majority of exhibitors would vote for the whip tails, not so the cockers I think, of the old style at all events. I dislike the Malay cross, which I am sure has been most freely used to produce our larger and leggier type of present exhibition birds. This style may suit exhibitors, but most cockers. I think, much dislike it, and I cordially dislike the slightest approach to Malay blood or type, though, of course, no cocker at all, but merely an "old-fashioned fancier" of Game fowls of the gamest type.—NEWMARKET.

We have another communication from "NEWMARKET," in reply to "YORKSHIRE" and Mr. Goodall, but the essence of the reply is, that he abides by his opinions expressed in our columns. We must decline inserting more upon the subject.—ED.

POULTRY SHOWS—COMMITTEES—RULES.

As the Marylebone Cricket Club has its acknowledged rules, and is the authority upon that game, might not Birmingham be made the "head centre" of the poultry world, and have, and issue rules to be adopted and followed by all poultry clubs and committees in the county and country towns throughout England?

Secondly. Of any poultry club, I would suggest that no exhibitor should be a member of the committee. If this were generally carried out we should not hear any remark about unfairness or selfish interest.

Thirdly. I would further suggest, that unless a certain amount of subscriptions can be obtained no cups should be offered, but money prizes only, and these prizes in each and every class of poultry should be equal.

Fourthly. As much as possible one show should avoid clash-

ing with, or being held too near, another in the neighbourhood—to wit, Newmarket, July 1st; Stowmarket, July 3rd; Dewsbury, August 19th; Whitworth and Rochdale on the same day.

Fifthly. The date for entries to close should be limited to fourteen days prior to the day of exhibition. Some lists give as much as thirty days, others only seven. This is an irregularity that admits of alteration.

Sixthly. I would admit poultry only to be exhibited. I will here ask, What is poultry? Any dictionary replies, Domestic fowls bred and fed for the table. What is a Pigeon? A gallinaceous fowl of the genus *Columba*; therefore, admissible to poultry shows. To these two varieties, then, poultry shows ought to confine themselves.—GALLUS.

HULL AND EAST RIDING POULTRY EXHIBITION.

THE entries for this Show consisted of 350 pens, and the character of the specimens in almost every class was such as is very rarely met with. A very remarkable feature was (the time of year being taken into consideration), that scarcely a dozen empty pens could be found. The condition of the birds, too, was excellent. The only drawback to the general appearance of the Exhibition arose from the peculiar construction of the building, which prevented the light being equally dispersed, and consequently some of the bottom rows of pens were placed to serious disadvantage for careful inspection. The Committee appeared most desirous to do everything they possibly could for the well-being of the birds, and as the weather was remarkably favourable, the Meeting proved most successful.

Perhaps it would be difficult to call to mind any show in which the Game classes abounded with so many first-rate specimens as the one just closed at Hull, and we can say that never were Game fowls shown throughout in such unexceptionable condition—in fact, most of the principal breeders of Game had specially reserved their strength to secure the very excellent silver cups that the Hull Committee had appointed as chief prizes. So faultless was the condition of the specimens, that we are informed of the first nine Game cocks that were "handed," every one on this point proved faultless. It was quite evident that the owners, well knowing how much depended on this point, and how certain they were to meet with the most severe competition, had done all that the most careful management could do to insure success; consequently, those poultry amateurs who neglected to attend the Hull Show have lost such a treat in Game fowls as even a long course of years may not again supply. *Spanish* were excellent, and for the season they were shown in unusually good feather. The *Grey Dordans* and *Cochin-China* classes were alike good. A pen of Partridge-coloured *Cochins*, winners of the marble bust of Vesta, were especially so. The *Brahmas* and Golden-spangled *Hamburghs* were placed in so imperfect a light, that they were difficult to distinguish, still it was evident there were many specimens of great merit. The Pencilled *Hamburghs* were such as are only rarely to be seen, even in this district, where these varieties are most carefully cultivated. "The Variety class" was most interesting, and there was a good entry as to numbers. Game *Bantams* were in full force, and seemed one of the most attractive to visitors. The Black *Bantams* at Hull were very numerous and especially good.

The *Aylesbury Ducks* were represented by giant specimens from the yards of those eminent breeders and exhibitors, Mrs. Mary Seamons and Mr. J. K. Fowler, both of Aylesbury, and the keenest competition, as might be expected, ensued. "The variety class" of Ducks embraced *Mandarins*, *Bahamas*, *Pintails*, *Carolinians*, and other choice varieties.

The *Pigeons* were especially meritorious, and the *Rabbits* were considered of unusually high merit.

The interest manifested in the Hull Show was made evident by the fact that many exhibitors were present from places as distant as London and Bristol.

The Judges of Poultry were Mr. H. Adams, of Beverley, Edward Hewitt, Esq., of Birmingham; and for Pigeons and Rabbits, Mr. E. Hutton, of Leeds. A list of their awards appeared in last week's number.

EPWORTH POULTRY SHOW.

THE third annual Exhibition of Poultry, Pigeons, Cage Birds, Rabbits, &c., was held at Epworth on the 8th of May. The Poultry and Pigeons were not so numerous as last year, but on the whole the quality was better. The show of Spangled *Hamburghs* was very good, but the Pencilled were very inferior birds. *Spanish* were shown in very good condition. *Game Bantams* were first-class, as also *Bantams* in the "Any other variety" class. There was a splendid show of Rabbits, Mr. Wagstaff, of Thorne, exhibiting some ten weeks old, and having ears 20½ inches long. Cage Birds were shown in considerable numbers. The day was delightful, and the attendance of visitors good.

Mr. H. Beldon officiated as Judge for Poultry and Pigeons; Mr. J. Spinks, Gainsborough, and Mr. J. Hammond, Epworth, for Rabbits; and Mr. T. H. Capes, and Mr. S. H. Hudson, Epworth, for Cage Birds.

The following are the awards:—

SPANISH.—First, J. Thresh, Bradford. Second, T. C. & E. Newbitt, Epworth. Highly Commended, W. Bearpark, Ainderby Steeple.

DORKINGS.—First, A. M. Aspinall, Althorp. Second, J. Boyes, Epworth.

GAME.—First and Second, F. Sales, Crowle.

COCHINS.—Prize, J. H. Dawes, Birmingham.

HAMBURGHS (Spangled).—First, S. & R. Ashton, Mottram. Second and Third, T. C. & E. Newbitt. Highly Commended, W. Bearpark; J. F. Loversidge, Newark.

HAMBURGHS (Pencilled).—Second, W. Benson, North Wheatley.

GAME BANTAMS.—First and Medal for best pen of Poultry in the Show, E. Toder, Little Carlton. Second, T. C. Harrison, Hull. Third, E. Toder.

BANTAMS (Any variety except Game).—First, T. Burgess, Brighstone (Pekin). Second, S. & R. Ashton (Black). Highly Commended, T. C. Harrison, Hull (Silver-faced).

ANY OTHER VARIETY.—First, S. S. Mossop, Long Sutton (Buff Polish). Second, Mrs. Cross, Briggs (Creve Coeur). Third, C. Addey, Epworth (Dark Brahmas). Highly Commended, G. W. Boothby, Louth (Gold Polish).

ANY VARIETY.—Cock.—First and Second, F. Sales (Game). Highly Commended, Mrs. Cross. Commended, S. & R. Ashton. Hen.—First, J. Thresh. Second, S. & R. Ashton. Third, T. C. & E. Newbitt. Commended, Mrs. Cross, Appleby; A. M. Aspinall; J. Seadmore, Epworth.

DUCKS (Any variety).—First, T. C. Harrison, Hull (Carolina). Second, A. M. Aspinall (Rouen). Highly Commended, S. & R. Ashton (Carolina); R. Brown, Belton (White Muscovy).

PIGEONS.

CARRIERS.—First, J. Hawley, Bingley. Second, H. Yardley, Birmingham.

PORTERS.—First and Second, C. Addey, Epworth. Highly Commended, J. Hawley; F. Key, Beverley; T. C. & E. Newbitt. Commended, H. Yardley.

TUMBLERS (Any variety).—First, F. Key (Almonds). Second, J. Thompson, Bingley (Yellow Mottled). Highly Commended, J. Hawley; H. Dundas, Epworth; C. Grivil, jun., Thorne; H. Yardley.

JACOBS.—First and Medal for best pen of Pigeons in the Show, T. C. & E. Newbitt. Second, J. Thompson. Highly Commended, C. Addey.

TURBITS.—First, J. T. Lishman, Gillingham, Bradford. Second, J. Thompson. Third, R. Wilson, Thirsk. Commended, F. Key; J. Thompson.

BARBS.—First, H. Yardley. Second, R. Siddal, Sheffield. Highly Commended, Rev. H. C. Russell, Doncaster.

FANTAILS.—First, J. Hawley. Second and Commended, T. C. & E. Newbitt.

TRUMPETERS.—First, J. Hawley. Second, T. C. & E. Newbitt. Commended, R. W. Bell, Hull.

ANY OTHER VARIETY.—First, R. Wilson, Thirsk. Second, J. T. Lishman. Commended, H. Yardley.

SELLING CLASS.—First, T. C. & E. Newbitt. Second, J. Thompson. Highly Commended, J. Hawley; H. Burnip, Epworth.

CAGE BIRDS.

CANARY (Yellow or Buff).—First and Second, Rev. H. C. Russell. Highly Commended, Rev. H. C. Russell; T. Maynard.

CANARY (Marked or Mule).—First and Highly Commended, Rev. H. C. Russell. Second, T. W. Dawson, Epworth. Commended, J. Wagstaff, Thorne.

GOLDFINCH.—First, R. Jackson, Epworth. Second, Rev. H. C. Russell.

LINNET.—First, Rev. H. C. Russell. Second, E. Glew, Epworth.

Highly Commended, T. Maynard, G. Batty, Epworth; J. Wagstaff.

ANY OTHER VARIETY.—First and Second, Rev. H. C. Russell (Waxwing and Starling). Third, Miss Read, Epworth (Parrot). Highly Commended, Rev. H. C. Russell (Siskin).

RABBITS.—First, A. H. Easton, Hull. Second, C. Grivil, jun., Thorne.

Rack.—First, J. Wagstaff. Second, A. H. Easton. Highly Commended,

C. Grivil, jun.; F. Roberts, Thorne. Commended C. Rayson, Prestwich.

Doe.—First and Second, F. Roberts. Highly Commended, A. H. Easton.

J. Wagstaff. Commended, C. Rayson. *Extra Stock* (Ten weeks old),

length of Ears 20½ inches).—Highly Commended, W. B. Hudson, Epworth.

RABBIT-JUDGING.

BEING a Rabbit-fancier, and in the habit of attending exhibitions, I am not surprised at many of the exhibitors being dissatisfied with the manner in which Rabbits are judged. In the first place, too often men are appointed to judge who do not understand them, and the results are the greatest dissatisfaction and confusion, and often the downfall of what otherwise might be flourishing exhibitions.

Rabbits, to be judged properly, require measuring and weighing if length of ear and weight are required; but if they are judged for all properties, length, breadth, and carriage of ear should be considered; also boldness of the eye, shape, colour, and weight. If Rabbits were judged on these points there would be more entries, an increase of exhibitions, and general satisfaction would be secured. Let committees attend to this, and they will find it advantageous. I would also suggest that judges' names should not be inserted in the catalogues previous to the exhibitions.—A FANCIER OF TWENTY-FOUR YEARS STANDING.

MALFORMED CHICKEN.—A chicken was found with four feet, four wings, and one head. Unfortunately it was dead when found, and must have been so for some days. It was a *Cochin-China*. It was found in the grass run amongst the sand, and my last chickens here hatched a week ago. It is in a good state of preservation in a bottle in spirits, and any reader of

"our Journal" or the Editors may have it for a museum.—
HENRY ENSOR.

PACKING EGGS.

A MONTH ago I purchased from Mr. J. Fletcher, Stoneclough, near Manchester, a sitting of fifteen Game eggs, and which were sent from Mr. Fletcher's runs, South Staffordshire. These, after their arrival, were put under an ordinary-sized Black Red Game hen, and on Wednesday last I had thirteen chickens from this clutch. Two of the eggs were unimpregnated. Today (Saturday), one of the chickens has died, but all the others are strong birds. I may mention that the eggs were packed in a small tea chest, having some straw in the bottom, then the eggs were put on this, some chopped hay covered and separated them from chance of collision, and after the eggs were carefully packed in this manner, the box was filled with straw, and the lid tied down firmly. Seeing that the parcel had a journey by railway of about 250 miles, and then the rumbling through the streets before delivery, I think the system of packing must be effectual.—BLACK RED.

[We shall be glad to hear from you.—EDS.]

HOW TO BREED PURE LIGURIAN QUEENS.

As many of the readers of "our Journal" may not be in a position to purchase the discovery of Mr. Koehler, I think they might in the meantime try the plan of an apiarian friend of mine for preventing his Ligurians from crossing. It is this. As soon as a young queen is hatched out in a nucleus box a number of pure Ligurian drones are selected for her companions, and confined along with her in the box for two or three days. Then, on the afternoon of a fine day, when all other drones in the apiary have gone to rest and the queen is judged ready to take her wedding flight, the hive is opened. As might be expected, the queen and her companions immediately avail themselves of their liberty, and a pure breed is secured. Should the first tour prove unsuccessful, the hive is again shut up, and not opened until the following afternoon.—
M. J., Lockerbie.

[The plan above described is well worth trying, and although I find myself precluded by my promise of secrecy from declaring how far it resembles Mr. Koehler's process, I may state that I have written to Mr. de Romein enclosing a copy of "M. J.'s" communication, and expressing my regret at being compelled to decline receiving further subscriptions.—T. W. WOODBURY ("A DEVONSHIRE BEE-KEEPER"), Mount Radford, Exeter.]

TEMPORARY SUPPORT OF COMBS.

In reference to your note appended to remarks on frame hives by "J. J. S.," I have to commend the method, at which he hints, of using indiarubber bands for the temporary support of combs placed in frames, having myself adopted it for two summers with much success. Common tape, of a suitable width, may also be used for the same purpose. It is tied tightly over the top bar, and when unloosed may be pulled up and removed at any time without disturbing the frame.—
J. LOWE.

ADDING QUEENS.

PLEASE give me advice as to the following plans:—1st, Place a Ligurian queen and brood comb in the centre of a hive, putting it in place of a black stock. 2nd, The same as the above, only the comb to be empty.

Will the returning bees be likely in both cases to receive the solitary queen as their own?—C. A. J.

[The returning bees would in either of the supposed cases be nearly certain to destroy the strange queen if exposed without protection to their tender mercies. The use of a queen cage might render success possible, although by no means certain.]

OUR LETTER BOX.

BOOKS (*Omega*).—"Bee-keeping for the Many" will suit you. You can have it free by post from our office, if you enclose six postage stamps with your address.

PIGEON BOOK (*A. V. D. M.*).—We believe Mr. Brent's "Pigeon Book" to be on the whole the best and most useful work of its kind ever published. It can be had from our office, free by post, if you enclose twenty stamps with your address.

HENS LAYING SOFT EGGS (*B. C.*).—There is some mistake in your feeding. We are followers of Nature, and therefore laugh at burnt oyster shells as poultry food. We call it food, because there is no doubt the shell is formed from that which is eaten. It cannot, however, be properly done unless the body is in a healthy state. Mortar and old ceilings, bricklayers' rubbish, &c., are very good for forming shell. The hens must also have green food and some whole corn, as the husk contains lime. If your birds are enjoying a good grass run, we can only advise a dose of castor oil all round. If they are in confinement give them plenty of lettuce, and some large sods of growing grass, cut with plenty of earth. If they are in a pen put a barrowload of earth in a heap, and let them search it over. They will often see medicine where it is hidden from us.

HEN BROODY (*E. C. N.*).—Do not torment her any more; her longing for the honours of maternity will soon disappear, and she will lay again. When she is again broody let her sit. We always think it is cruel to prevent it, and we are sure nothing is gained by it.

FATTENING SPRING CHICKENS (*Miss J.*).—Put up your spring chickens at once. They should have been put up before, and will never again be so valuable as at the present time. Every day will help to diminish the value of spring chickens. You may grow any shrub or climber not poisonous in your aviary; you cannot help the birds eating them. We do not think the ants will do any harm.

VARIOUS (*R. J. W.*).—If the Dorking cock have sufficient merit to make it desirable to keep him, do so by all means, even under the circumstances you name, but for this year only. Brahmas' eggs are not as a rule longer in hatching than others. The extra time is often caused by the eggs being kept so dry; the chickens cannot get out, and many die imprisoned in the shell that, with the least assistance, would have made their way into the world. Another cause is, that hens sometimes get to the sitting nests, and lay a day or two after the other hen began sitting. The Ducks' eggs were "all behind," but we should attribute it to the same cause as the delay in the other case. It cannot be too strongly impressed on all amateurs and others, that regular and successful hatching cannot be looked for unless the eggs are regularly and thoroughly wetted.

GROWTH OF BRAHMA CHICKENS (*G. N.*).—Your Brahmas are growing very well, and if you keep them at the present rate they will leave nothing to desire in the way of size. We have some of the same age, and the pullets are larger than the cocks. It is positive nonsense to talk of keeping pullets from laying with a view to improving them for exhibition, because it cannot be done.

BRAHMA COCK (*B. P. C.*).—The cock will not or should not be disqualified.

FODDER (*Quiz*).—All cattle, horses, and sheep eat white clover. Cows will not eat buttercups, notwithstanding the vulgar idea that they make the butter yellow. Buttercups flourish where the soil is rich and moist. The grass there is also abundant and nourishing, and it is the rich herbage which imparts the colour.

LITERARY (*J. B. B.*).—The attempt was made, and occasioned a heavy loss to the able conductors. A sufficient number of subscribers cannot be obtained.

HULL AND EAST RIDING POULTRY SHOW.—The second prize for Black Bantams was awarded to Messrs. Tonkin & Tuckey, Norfolk House, Gloucester Street, Bristol.

FOOD FOR PIGEONS (*Fantail*).—The Pigeon is a granivorous bird, and therefore must be fed on grain. Other food may be used as additions, but not as substitutes.

AMERICAN COLLATERAL PLAN (*A Fifeshire Bee-keeper*).—An ordinary straw skep (empty) is placed in front of the stock when the bees begin to get busy in May or June, and in good seasons a second skep is placed in front, and by taking the backmost skeps away after the bees have taken to those in front, a good supply of honey is obtained. The objection to this plan is that the bee-keeper obtains none but dark-coloured honey in old combs, whilst there is great risk of so large a proportion of drone combs being built in the added hive as to preclude the possibility of prosperity for the future.

MR. KOEHLER'S DISCOVERY.—Amongst those German apiarians whose testimony to the success of the Koehler process has come under my notice, none is so well known to English readers as the Baron von Berlepsch, whose evidence on the point is most conclusive. Writing under date of the 27th of November last, the Baron declares that he has tested the discovery at six different times, and that on every occasion it has proved successful.—A DEVONSHIRE BEE-KEEPER.

FOOD FOR A SQUIRREL (*Poplar*).—Give your Squirrel bread soaked in milk fresh every day; also nuts, apples, and any other kind of fruit. It would not be safe to place a Squirrel in an aviary with Canaries.

SCIENTIFIC WONDER (*T. H. P.*).—We have not seen it, and therefore can give no opinion.

BUTTER BECOMING RANK (*Quirymahl*).—We do not think the buttercups are the cause, for cows avoid eating them, and they exist in quantity in most of the best pastures we have; but there are other weeds that sometimes affect the milk, one of the worst being a sort of bulbous plant, called ramps or ramson, a near ally to the garden onion or garlic, which grows in moist shady places. We have also known much damage done by allowing the cows to eat the waste cabbage and other greens thrown out of gardens at this season, and in the autumn some (but not all) cows partake, to their injury, of horse chestnuts. Many other causes tend to render milk ill-flavoured. We are, however, promised further information on this head.

POULTRY MARKET.—MAY 20.

POULTRY is still very scarce, but there are signs of a greater supply of small chickens. They will, doubtless, now come in more abundantly.

	s	d.	a	d		s	d	a	d
Large Fowls.....	6	0	to	6	Pheasants	0	0	to	0
Smaller do.	5	0	to	5	Partridges	0	0	to	0
Chickens	2	6	to	3	Guinea Fowls	0	0	to	0
Goslings.....	6	0	to	6	Hares.....	0	0	to	0
Ducklings.....	2	6	to	3	Rabbits.....	1	4	to	1
Pigeons	0	9	to	10	Wild do.....	0	9	to	10

WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 28—JUNE 3, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year
			Day.	Night.	Mean.		m.	h.		m.	h.				
28	Tu	Royal Botanic Society's Show closes.	67.8	44.5	56.1	15	55	af 3	9	af 8	49	af 10	25	af 6	149
29	F	Manchester National Hortic. Exhibition.	67.1	43.9	55.5	13	54	3	1	8	after	57	0	7	150
30	S	Royal Horticultural Society, Promenade.	67.9	44.6	56.3	16	53	3	2	8	21	1	26	1	151
31	Scn	Whit Sunday.	69.1	45.1	57.1	15	52	3	3	8	33	2	53	1	152
1	M	Meeting of Entomological Society.	68.0	44.0	56.0	15	52	3	5	8	41	3	18	2	153
2	Tu	Royal Horticultural Society's Great Show	68.4	45.0	56.7	18	51	3	5	8	55	4	42	2	154
3	W	Meeting of Geological Society. (opens	69.4	44.2	56.8	20	50	3	6	8	1	6	9	3	155

From observations taken near London during the last forty-one years, the average day temperature of the week is 68.2°; and its night temperature 44.5°. The greatest heat was 91°, on the 28th, 1847; and the lowest cold 25°, on the 29th, 1865. The greatest fall of rain was 0.97 inch.

BEET AS A BEDDING PLANT.



WITH Mr. Robson's Hertfordshire friend I quite agree as to the comparative merits of Beet as a dark-foliaged plant. I have grown the variety known as Barrett's Crimson Beet for the last ten years, and can always obtain it so genuine from the seedsman that every plant looks as if turned out of the same mould, and I have rarely ever known one run to seed. It can be sown so early as to give a longer season of effect than either Coleus, Iresine, or Amaranthus, and it certainly is, taking one season with another, the most effective plant of the whole. Its lustrous dark-crimson leaf, with just a shade of bronze playing over it, is alike beautiful in sunshine and in rain.

I have also grown Dell's Beet, which is, if anything, a shade darker, but lacks the bronzy lustre of Barrett's. Dell's is more dwarf and pointed in the leaf, as well as less recurved than Barrett's. Let any one plant a bed of Centaurea, put a single line of Beet round it, and finish with the chaste and graceful *Dactylis glomerata* or *Polemonium caeruleum variegatum*, and he will have a bed very difficult to be excelled. These Beets, whatever prejudice may exist against them as stray vegetables in the flower garden, are most effective, and are within the reach of the million, who cannot grow the tender dark-foliaged plants.

The Iresine did beautifully here last year, planted in almost dung, and well supplied with water. In dry poor soil it is dingy and shabby. A series of vases placed at the back of a border and planted with Centaurea, having a line of Iresine connecting and encircling the vases and hiding them, so that the Centaurea appeared to rest on the Iresine, was very much admired. I think those who have heavy rich soil will find the Iresine well worth growing, especially in wet localities.—D. THOMSON.

P.S.—I may remark that Beet does much the best when sown where it is to remain in rich soil about the last week in April, and if well through the ground at the ordinary bedding season it soon makes good its appearance among its compeers, and long outlasts them in autumn.

STANDARD NOSEGAY PELARGONIUMS FOR WINTER BLOOMING.

Few subjects of recent introduction are more beautiful than some of the Nosegay Pelargoniums, and when grown as standards or half-standards I question if there is anything more valuable for the winter decoration of the conservatory, and the supply of flowers which they afford for cutting is surprising. Having a large conservatory to make gay in winter I have usually grown a selection from Mr. Beaton's and other varieties to flower from October to May, and nothing could better answer the purpose.

In adopting the standard form of training I have not been guided so much by the vigorous habit of growth which these Pelargoniums possess as by the noble and ornamental appearance for conservatory decoration which

this form presents; for though the dwarf broad specimens usually seen at the metropolitan exhibitions are fine examples of the cultivator's skill, yet I am of opinion that the length of time and trouble required to grow such specimens, and the inconvenience in arranging that form to advantage in a miscellaneous collection of plants as compared to the standard, are against its being adopted by the majority of gardeners for the above purpose. The standard plant also produces larger trusses, finer flowers, and of greater substance than the dwarf.

Feeling sure that the merits of this section of Pelargoniums entitle them to a much more extended cultivation than they now receive, I will give a list of the varieties I have found most suitable, with a few remarks on their culture. When this appears in print it will be time to procure such varieties as Duchess, Amy Hogg, Glow-worm, Excellent, Orange Nosegay, Black Dwarf, Magenta Queen, Salamander, Pillar of Beauty, Searlet Gem, Madame Rudersdorff, Cybister, Dr. Lindley, The Clipper, Princess Lichtenstein, and Madame Chardine.

Presuming these to be small plants in 3-inch pots, shift them at once into 6-inch pots. Drain the pots well, and use a rich soil composed of one-half heavy turfy loam, the remainder leaf mould, rotten manure, and sand in equal proportions. After potting water well, and keep the plants close for a few days, either in a frame or pit without artificial heat. Select the strongest shoot, and train it to one stake, taking off all others with flower buds as they appear. As the plants become established more air must be given, and in three weeks after potting they will be sufficiently rooted to be shifted into 9-inch pots, in which they may be allowed to bloom. Use the same sort of soil as before, but coarser. They may now be plunged up to the rim of the pot in half-decayed leaf mould or old tan in a sheltered but sunny spot where the water can drain easily from them. By the last week in August take off the tip of every plant, which will cause them to break at the top, allow two, three, or four shoots to remain, according to the strength of the plant, and when these are about 4 inches long, take the tip out of each of these. When they have again broken into growth, which will be towards the middle of October, they may be taken to the conservatory, where they will grow rapidly and flower freely the whole winter. On some of the weaker-growing sorts it may be necessary to thin-out the flower trusses, or they will exhaust themselves. In February give a rich top-dressing, and a liberal application of manure water twice a-week will be of service to them. About six trusses of different varieties will fill a large flower stand or vase, and when mixed with *Adiantum* (Maiden-hair Fern), they are very ornamental in the drawing-room at Christmas.—T. REEBO, *Hackhurst*.

FRUITING STRAWBERRIES FROM THE PREVIOUS YEAR'S RUNNERS.

THE fruiting of a Strawberry plant from runners of the previous year is, I think, an element in the estimate of the comparative value of different sorts, second only to flavour and size. Perhaps the results comprehended in the following

ing table, compiled for my own guidance in selection, may be of service to others. It is only of value, of course, in relation to such seasons as the past. The soil is a sandy loam, 15 inches deep, with just sufficient clay to insure its cracking very slightly in dry weather when the surface has not been previously stirred with the cultivator. The subsoil is clay.

With the exception of Dr. Hogg Strawberry, which I did not remove till spring, they were all transplanted in balls in the month of September last year. Had this been done in the middle of August the results would have been much more favourable, both as to frequency of bloom and strength of plant.—FRUIT-EATER.

	Date of planting.	Per-centage of plants now in bloom.		Date of planting.	Per-centage of plants now in bloom.
Sir Charles Napier ..	21	86.0	La Constante	20	60.6
Sir Joseph Paxton ..	23	85.9	Souvenir de Kieff ..	15	59.3
Fairy Queen	20	85.2	Crimson Cluster	30	58.7
Wonderful	20	83.9	Comte de Zans	20	57.4
Saveuse	15	83.3	Cockscorb	20	50.0
Marquise de la Tour ..	20	79.0	Cox's Hybrid	19	50.0
President	20	78.6	Royal Hanthois	20	47.0
Rivers' Eliza	19	77.0	Madame Vilmorin ..	15	42.8
Dr. Hogg	—	75.7	Emma	27	41.0
Sir Harry	21	73.6	Lucas	28	38.7
Lady	21	72.7	Léon de St. Lannier ..	28	35.0
Virginie	15	71.9	Frogmore Late Pine ..	20	34.0
Scarlet Pine	20	70.5	Goldfinder	20	31.0
Prince Imperial	21	70.4	Marguerite	30	21.9
Magnum Bounn	20	68.6	Keens' Seedling	17	20.0
Admiral Dundas	28	65.3	Elton Improved	30	14.3
John Powell	21	64.0	Princess of Wales ..	15	12.5
Empress Eugénie	30	63.8	Crimson Queen	24	9.5
British Queen	23	61.8	Elton	30	5.7
Carolina Superba ..	17	60.9			

INSECTS.

(Continued from page 357.)

THE green *aphis* on Peach, Plum, and other fruit trees, on Roses, and all kinds of trees, shrubs, and plants in the open air, is best overcome by dusting them with tobacco powder; and now that we have preparations of tobacco duty free, the expense is not a serious obstacle. Tobacco has long been known to horticulturists as a powerful agent in the destruction of insect life, but the heavy duty on that of foreign or colonial growth, and the almost total prohibition of growing it in this country, prevented horticulturists from using it extensively, although the best, safest, and most easily applicable remedy for insect enemies.

In applying tobacco powder in the open air, the tree, shrub, or other plant should be lightly sprinkled with enough water to make it wet, and the parts affected with *aphis* should be dusted with the tobacco powder by means of a distributor, which is made of indiarubber in the form of a wine decanter or water bottle, only smaller, and having a broad bottom on which it stands well. It has a moveable brass nozzle, or jet, with seven holes in it, answering to the stopper of the water bottle. The way to use the distributor is to fill the indiarubber flask about half full of the powder, using a tin funnel to prevent waste, then to replace the jet or nozzle, and on pressing the flask the powder will be forced out through the holes in a cloud of dust, which may be directed against the parts infested, and particularly the under sides of the leaves. The tobacco powder will destroy all the fly it touches and does not injure the plant. A calm day is best for dusting plants, for the wind does not blow away or divert the course of the powder, and the plants damped remain longer moist. The operation should be performed in the evening or late in the afternoon. It is not necessary for the destruction of green fly to have the plants wet, only the powder adheres better; and acting to some extent as a decoction, its effects are extended to parts not easily reached by dusting, and any danger of injury to the plant is lessened. Although the powder is not injurious to the foliage when put on whilst dry, yet when it is so applied it is well to give within six hours afterwards a slight wetting with water from a syringe. In forty-eight hours the trees or plants should have a good syringing so as to thoroughly clean the foliage. The powder is as applicable to plants in-doors as in the open air, only for plants and fruit trees under glass I consider fumiga-

tion more cleanly; but there are instances where fumigation cannot be practised, then dusting with tobacco powder will be an effectual means of freeing the plants of insects of the *aphis* family. The tobacco powder and distributor here referred to, and which I employ for freeing plants of green fly, are those of Mr. Pooley.

The tobacco powder may be employed upon trees in blossom, it does not do them the least harm, but the flowers and foliage should be dry, and a light dusting given.

Mr. Pooley has also invented a compound called tobacco soap. This is for those preferring to syringe their plants; 2 ozs. should be dissolved in a gallon of soft water, and with that strained through a hair sieve the trees or plants should be syringed, thoroughly wetting the parts infested with green fly, which the tobacco soap destroys. My experience of it is limited to trees and plants with smooth leaves, such as the Peach and Rose, and I cannot, therefore, say what its effects would be on such plants as *Pelargoniums*, *Calceolarias*, and others having soft, hairy, succulent leaves, and I may, therefore, whilst doing full justice to Mr. Pooley's invention, ask the readers of the *Journal* to exercise caution, especially as the green *aphis* is easily destroyed on such plants by fumigation with tobacco, and dusting with tobacco powder.

There is not, so far as I am aware, any means of preventing the attacks of green fly. The best natural destroyer is water. The plants cannot be too well syringed, and syringing should, therefore, be extensively practised. Some birds are great devourers of green fly. They should be protected.

Black Fly or Aphis.—This is smaller, shorter, and less common than the green *aphis*, its attacks being chiefly confined to the Cherry, hence its name, *Aphis cerasi*. It is of a bright black, and next to the blue *aphis* is the most difficult to destroy of the *aphis* family. The trees should be syringed, and dusted with tobacco powder, forcing it well under the leaves. In forty-eight hours they may be well syringed, and if any insects remain dust with tobacco powder as before. A syringing with a solution of tobacco soap, 3 ozs. to the gallon of water, will also destroy it. A decoction of tobacco, 8 ozs. to the gallon, is an effectual destroyer of this pest.

Brown Peach Aphis.—This very much resembles the black *aphis*, only its colour is dark brown; it is very troublesome on the young shoots and buds, both when the Peach and Nectarine is leafless and in foliage. The most eligible method of destruction for plants under glass is fumigation with tobacco, but it is of little use to fumigate unless the house can be filled with smoke, and it can be retained round the trees. Do not syringe the trees the following day, but keep close (without injuring the trees), and the next evening but one after the fumigation examine them, and if the insects are dead give a thorough syringing; if some are alive repeat the fumigation, syringing forcibly the following evening.

Dusting with tobacco powder will also free the trees of this pest, previously syringing them, but not so as to force off the aphides, for in that case they only find their way back again, and are out of harm's way for a time at least. For the destruction of aphides the tobacco powder must come in contact with them, for it only destroys those it touches. For destroying this *aphis* in winter, or when the trees are leafless, nothing answers so well as dressing them with a composition formed by mixing boiling water with tobacco powder until it is of the consistency of thin paint, which should be applied with a brush drawn upwards so as not to dislocate the flower buds.

Blue Plum Aphis.—This resembles the green fly, but is flatter and of a bluish hue. Of the *aphis* family it is the most difficult to destroy, for it causes the leaves to curl and fold over, thereby shielding it from outward attack. The best means is to force tobacco powder into the lodgment of the insect on the under side of the leaves and points of the shoots with a distributor, having previously made the tree wet. The following evening give a thorough syringing with a solution of soft soap at the rate of 2 ozs. to the gallon of water, or the trees may in the first instance be syringed with a solution of tobacco soap, 3 ozs. to the gallon of soft water, forcing it well into the curled portions of the leaves from their under sides, making the parts quite wet with the solution. The tree should have a good syringing with clear water in the following evening.

There are many species of *aphis* besides those named, but the preceding are the principal. All are destroyed by dusting with tobacco powder, the trees being previously wetted or dusted after a shower.

It must not be supposed that the tobacco powder will free a tree of aphides at the first application, for there may be some

of them which it does not reach, and in that case it is absurd to expect them to be destroyed, for they breed very fast. Actual contact is needed, and then one application is as effectual as half a dozen. A good look-out must, therefore, be kept, and remedial measures at once adopted, and if one application fail another must be given. There is no species of aphid that tobacco will not kill, and after using many remedies considered the most effective, I have arrived at the conclusion that they must all give way to tobacco in the form of a powder, in smoke, or as an infusion. Other remedies I have discarded, because I have prepared for me, from duty-free tobacco, a cheaper, a simpler, and a more effectual remedy.—G. ABNEY.

(To be continued.)

MELON CULTURE.

In the number for May 7th, page 346, "R. F." stated that he was perplexed as to the cause of his Melon plants in two lights losing their leaves; and having in my own practice experienced the same evil, I will endeavour to describe how it takes place, and the means by which I prevented it.

The pit in which we grow Melons is very similar to that referred to by "R. F.," save that it is heated by a brick flue instead of by hot-water pipes. In the inside wall of the hot-air chamber over which the beds are made is a slide, and on opening this hot air will pass from the chamber into the atmosphere of the pit. There are also ventilators in the roof.

Early in spring about six years ago I observed some red spider attacking the plants, which are trained on a trellis; and in order to check its progress the plants were syringed on the under side of the foliage when closing the pit at night, and having occasionally let rather too much hot air escape from the chamber while the plants were wet, I found the leaves perish in just the same way as "R. F." has described. Since that time care has always been taken to have the plants dry before closing the pit, especially on cold frosty nights, when we have to raise the temperature a little by fire heat; but at other times one of the ventilators in the roof is left open to allow of the escape of any superabundant heat and moisture. Ever since this precaution has been adopted excellent crops of Melons have been produced, the plants being clothed with large healthy clean leaves to the very roots, with not a brown spot on them.

Now these precautions, like many other valuable lessons, were derived from observing a natural occurrence: for on a certain day early in spring, about 2 P.M., a heavy snowstorm occurred, which, lasting only half an hour, was succeeded by bright sunshine; and the foliage of deciduous trees being then barely expanded, and consequently rather tender, the sudden sunshine proved too strong for some Damson trees in the open garden. The foliage on the south-western side of these was very much scalded, and next day had the very same appearance as the damaged Melon plants in the pit.—H. HALL, *Gardener to W. Dickens, Esq., Cherrington.*

WISTARIA SINENSIS.

Not remembering to have seen this glorious old climber on any but southern aspects, I fancy few people are aware how well it is adapted for northern exposures.

I have a plant about 30 feet by 30 feet on the north-east front wall of my dwelling-house, now, May 18th, about in perfection. It seems to me the colder have the following advantages over the warmer aspects for this plant. The blooming season is quite a fortnight or three weeks later, the buds are consequently not so liable to injury by frost, the flowers retain their colour, and remain very much longer in beauty, and, above all, the plant is clothed with its charming foliage at the same time with the blossom, which is not the case when it is grown on the warmer aspects.—JOHN INGRAM, *Huntingdon Nurseries.*

[We have seen the Wistaria doing well on east and west aspects.—Eds.]

THE FLOWER SERMON.—According to custom, the Rev. Dr. Whittemore will deliver a sermon on "Flowers," on the evening of Whit-Tuesday; but this year he will preach at the church of St. Catherine Cree, Leadenhall Street, and not at St. James's, Aldgate, as hitherto. The musical portion of the service will be undertaken by fifty members of the St. Paul's Special Evening Service Choir. As each member of the con-

gregation usually carries at this service a bouquet of flowers, the effect is most pleasing, and the service is rendered especially interesting.—(*City Press.*)

SPRING FLOWERS AT NUNEHAM PARK.

"AND when those flowers unfold their bloom 'may I bethere to see.'" That was a wish I expressed last November in page 405. On the 17th of April my very good friend Mr. Stewart wrote me, "Our spring garden will be in its beauty by Thursday week; can you run over and see what we are doing?" I and two friends readily obeyed the summons, reached Nuneham, and much we marvelled and admired to see the common flowers of our childhood so cherished and so prominently shown forth.

We saw in a circle sixteen large csetheons, having their fields consisting of two beds of *Alyssum saxatile* and *Arabis albidia*, two of *Silene pendula*, three of *Myosotis alba*, five of *M. sylvatica*, one of *Phlox frondosa*, one of *P. prostrata*, and two of *Cliveden Blue Pansy*, broadly and alternately bordered with *Cerastium tomentosum* and the double pink *Aucuba-leaved Daisy*. The general effect was certainly most striking. I had the pleasure of seeing these beds in a blaze of beauty last autumn when furnished with their summer bedders, and now in May they are certainly more brilliant. Eight months in flower, and for the other four the soil covered with green and variegated foliage! At the end of May Mr. Stewart will take the first safe opportunity—but there will be no hurry, for the beds are gay—to plant out his *Pelargoniums*, &c.; and then the present occupants of the beds will be divided and planted in back borders and out-of-the-way nooks and corners, or, if seed be required from any of the plants, they will be left intact and planted somewhere out of sight to mature it. I do not know if it is intended to let the *Daisy* and *Cerastium* remain for edging the beds during the summer, but they would be appropriate for the purpose; the *Daisy*, however, wherever it may be, must be kept in moist soil. Mr. Stewart informed me last autumn that he thought of dispensing with *Cerastium tomentosum*, as it would not stand the shears here; but however that may be, it looks exceedingly well and neat at the present time. I observed also that the *Roses* around were "breaking" strongly and healthily.

We now proceed to "Mason's garden," and are confronted by a group of round beds, five in number, having their centres occupied with vases on pedestals, which are surrounded with *Myosotis sylvatica* and *M. alba*, *Trentham Blue Pansy*, and the *Aucuba-leaved Daisy*. Plants of *Dielytra spectabilis*, much injured by a destructive frost, occupy the vases above. In the round Cupid bed I observed that his dart pointed to a border of *Stachys lanata*, and under the protection of his weapon were *Phlox frondosa*, *Heartsease*, and blue and white *Forget-me-nots*. Upon the greensward *Magnolia purpurea* and *Soulangeana* were in fine bloom, and *Magnolia conspicua* was about to follow. To the right, like the principal jewel in a crown, the arrangement on the site of the old orangery was in a full blaze with large scarlet *Pelargoniums* in pots, and other plants; and trained on the back trellis and in bloom was that sweet *Rose Gloire de Dijon*, ever the first to welcome us in the open air. The parallelogram beds in front of the above are occupied by ottomans of varieties of *Tulips*, having *Viola cornuta* just coming into bloom for a carpet, bordered with *Cerastium tomentosum*. I conclude the last two will be permanent, or, if not, they should be.

On passing away from here, under a magnificent weeping *Pine*, *Abies pendula*, endowed with two leaders high in the air, which must long before its natural time prove the destruction of the tree—a most unfortunate neglect—we notice on a memorial pedestal to the planner of this part of these fine grounds, the inscription—"George Simon, Earl Harcourt, Consecrates this Cenotaph to the Memory of his Friend, the Rev. William Mason."

Passing some fine clumps of *Rhododendrons* well knotted with bursting blossom buds, with *Rhododendron Cunninghamii* in full flower, and many new hybrids freshly introduced, we are once more arrested by "Mr. Harcourt's bed," in shape something resembling the letter X, with an elongated waist, which fits into a cosy nook of sward. *Liliums* and *Gladioluses* bordered with *Vinca elegantissima* are springing up in it for the summer decoration, and the present field of colour being *Myosotis sylvatica*, *M. alba*, and the *Aucuba-leaved Daisy*.

Then we wander to the north terrace garden. The effect required to be seen; no written description could depict its

beauties, and I thought it more "telling" than the more geometrical garden which we afterwards saw on the south terrace. An irregular triangle I think I may term the groundwork of this plan, and twenty-nine variously shaped or placed beds are formed to fit it. A fine standard Holly occupies a position near the eastern limb, and five handsome vases on pedestals are made to arrange themselves as symmetrically as possible in the centres of as many beds. I will give a general description of the planting; and should I fail in some instances as to truth of detail, Mr. Stewart can use a pen as well as a spade, and I hope he will be good enough to correct the mistakes. I ask my readers to conceive a few beds to be planted singly, others in pairs, and some in groups of three of the same varieties of flowers—viz., small opportune beds with Daisies and Pansies; triangular and shield-shaped beds with centres of yellow Wallflowers and of *Alyssum saxatile* bordered with *Myosotis sylvatica* and *M. alba*—remarkably striking were those beds whose fields were planted with *Alyssum saxatile* and bordered with the *Myosotis*; entire beds of the latter in *Myosotis sylvatica* and *alba*, and also of both bordered with yellow Wallflowers, and the reverse. A bed bordered with *Silene pendula*, having a carpet of *Alyssum saxatile*, was much admired. Two beds of *Polyanthus* and Blue and Yellow Cliveden Pansies, bordered with the Aucuba-leaved Daisy and *Phlox frondosa*, were long pondered over.

The vase beds had for carpeting *Aubrietia deltoidea* and Blue and Yellow Cliveden Pansies, the latter good and true to colour; but truth compels me to state that the Blue Cliveden Pansy, as I saw it here, was, with the exception of one instance, a misnomer. This one instance was where it had a position quite in the shade. In a dry position and in the sun it becomes anything but blue; but in the bed, bordered with the Aucuba-leaved Daisy, running parallel with and near to the north wing of the mansion, it was a true blue thing of beauty. The Aucuba-leaved Daisy also was more at home here; and from this spot as we stood in the shade, whilst the sun was shining upon the design, the flowers and the surrounding fresh-bursting verdure, including the play of the ground, and light and shadow, on this a really old-fashioned May day, was a sight to see and to be remembered. The *Mimulus* family takes rank along a narrow border immediately flanking the house, *Myosotis* along the east, whilst scarlet Stocks occupy the other narrow border running their length for the outsides of the plan. We then emerged on the front terrace, the groundwork of which is plain gravel. The blossoms of the fine *Wistaria sinensis*, growing against the outside of the bend of the mansion called the corridor, have fortunately withstood the frost. Mr. Stewart attributed this to the corridor being heated inside. We now arrive at the south terrace.

Plenty of enthusiasm remained even yet for the spring flowers in this symmetrical arrangement, consisting of twenty-eight beds, each nodding to another, and every flower bed having its brother. We begin with a crescent of Cliveden Blue and Yellow Pansies, then a vase on a pedestal, followed by a large bed, something in the shape of a thick-waisted hour-glass, planted with Young's Blood-red Wallflower, introduced here this season. It is a dark beauty, and is bordered with *Myosotis alba*, then follow four parallelogram beds; that to the right hand or outside occupied with *Myosotis sylvatica*, centred with *Alyssum saxatile*, longitudinally followed by another bordered with *Myosotis alba*, centred with *M. sylvatica*. The fellow beds immediately on their left are bordered with the Aucuba-leaved Daisy; one centred with La Candeur Tulip, and the other, which was lately centred with Hyacinths, was temporarily filled with new sports of Daisies. The Hyacinths I afterwards saw in the frame ground, the pots in which they were plunged being placed on their sides. I could easily judge that they had blossomed exceedingly well. Now follow two hour-glass beds crosswise, having centres filled with yellow Wallflowers, bordered individually with *Myosotis sylvatica* and *M. alba*, and so conclude the quarterings of the design. A handsome escalop vase on a pedestal is here interposed, and there is a vase to match it on the opposite side.

The only departure from a similarity of planting in the four quarters is in the parallelogram beds containing the Tulips. Opposite that containing La Candeur Tulip, Tournesol appears; opposite Tournesol in the lower quarter as we proceed is *Rex rubrorum*, and I can affirm that finer flowers of their kind were never bloomed in old England. In order to make them blossom together Mr. Stewart plants *Rex rubrorum* and Tournesol 3 inches deeper in the soil than La Candeur, otherwise the latter would appear blooming alone. *Dielytra spectabilis*,

which occupied the six vases, was severely injured by the frosts. Blue earthenware barrel seats interpose also in position along each flank of the plan, and for my part I thought they distracted the eye from the flowers. I threatened you with the arboretum when I came to Nuneham again, but again time would not allow me to visit it.—UPWARDS AND ONWARDS.

LATE BROCCOLI—DISEASED MUSHROOMS.

I HAVE forwarded to you some specimens of Cattell's Eclipse Broccoli, in order to show you the value of this variety for late spring use. The largest heads are the produce from seed sown in the third week in May of last year, the next size are from seed sown in the first week in June, and the smallest are from seed sown in the last week in June. By these successional sowings I shall be able, without difficulty, to send Broccoli to table until Cauliflowers come in from hand-lights. I know of several large gardens where Broccoli has been used up a fortnight ago, therefore in the present trying season for this class of vegetables I consider the sort I send you invaluable. I cut the same sort last year until the 20th of June.

I also enclose specimens of Fungi that came up in my Mushroom bed, spawned five weeks since. Can you tell me what they are? and are they eatable?—THOMAS RECORD, *Lillesden Gardens*.

[The Broccoli was surpassingly fine, firm, compact, and white. The specimen from seed sown in May weighed, when prepared for boiling, 3 lbs. 2 ozs., and the flower was 2 feet 2 inches in circumference. The Mushrooms are the true species, but virulently attacked and diseased by the parasitical Fungus mentioned at a meeting of the Royal Horticultural Society a few weeks ago. This parasite is believed to render the Mushroom unwholesome, if not actually poisonous.—EDS.]

CRYSTAL PALACE SHOW.—MAY 23.

THIS was the finest Exhibition without any doubt that I ever remember to have seen at the Palace, and there were some older hands than myself who endorsed my opinion by saying that it was the best ever seen there by any one. The delightful rain which at last had come to refresh the thirsty ground would have damped the hopes of an attendance in any other place; but the Palace folks are independent to a great degree of weather, the coolness of the air added greatly to the enjoyment of the Show, and the flowers greatly benefited by it. I never remember to have seen so few indifferent collections, while in some classes the plants were in advance of anything I had seen; notably was this the case in Roses and Pelargoniums.

In the class for ten Roses in pots not larger than 13 inches across, the contest was so close that it was impossible to say to which of the two collections—those of Mr. Charles Turner and Mr. W. Paul—the first prize was to be awarded, and the Judges at last cut the Gordian knot by making them both equal. Mr. Turner's collection comprised *Celine Forestier*, very fine, *Anna Alexieff*, General Jacquemint, John Hopper, *Souvenir de Malmaison*, *Souvenir d'un Ami*, Charles Lawson, Victor Verdier, *Vicomte Vigier*, and *Comtesse C. de Chabrilant*. Mr. W. Paul's were *Caroline de Sansal*, *Anna Alexieff*, General Jacquemint, *Baronne Prevost*, *Celine Forestier*, *Senateur Vaise*, *Paul Perras*, *Juno*, *Souvenir d'un Ami*, a grand plant, and *Madame Willermoz*. Messrs. Paul & Son were third with a nice collection, and Messrs. Lane & Son fourth.

In the class for twelve Roses Messrs. Paul & Son were first with beautiful plants (in my estimation plants in this class are far prettier than the larger ones), of *Alba Rosca*, *Camille Bernardin*, *Catherine Guillot*, *Souvenir d'un Ami*, *Celine Forestier*, *Mons. Noman*, *Antoine Ducher*, bearing out all I have said of it; *Madame Margottin*, beautiful; *Paul Verdier*, *Madame Willermoz*, and *Marie Baumann*, fine. Mr. Charles Turner was second with nearly equal plants of *General Jacquemint*, *Souvenir d'un Ami*, *Camille Bernardin*, *Madame Fillion*, beautiful, *Madame Margottin*, *Madame Emme Appert*, *Mille*, *Annie Wood*, beautiful, *Victor Verdier*, *Mons. Plaisance*, and *Comtesse de Chabrilant*. Mr. W. Paul was third.

Of Pelargoniums admirable collections were shown both in the amateurs' class and by growers for sale. In the former Mr. Nye, gardener to E. Foster, Esq., and Mr. Ward, gardener to F. G. Wilkins, Esq., were equal first. The former had *Marion*, *Patroness*, *Belle of the Ball*, *Royalty*, *Etna*, *Miss Burdett Connt's*, *Mille*, *Patti*, *Desdemona*, *Conqueror*, and *Garibaldi*. Mr. Ward had fine plants which resembled one very much of those of Mr. Bailey, of Shurdloes; the kinds being *Patroness*, *Sir Colin Campbell*, *Pericles*, *Celeste*, *Lilacina*, *Rose Celestial*, *Mille*, *Patti*, *Desdemona*, *Etna*, and *Empress Eugenie*. Mr. Turner and Mr. Fraser as usual ran one another very closely, the former being first with *Spotted Gem*, *Lilacina*, *Desdemona*, *Beacon*, *Pericles*, *Royal Bride*, *Rose Celestial*, *Fair Rosamond*, *Mille*, *Patti*, and *Exemple*. Mr. Fraser's plants were *Celeste*, *Empress Eugenie*, *Lilacina*, *Jewess*, *Belle of the Ball*, *Desdemona*, *Coast Guard*, curious and delicate shade of lilac; *Favourite*, *Regina Formosa*, and *Beacon*,

These gentlemen again showed in Fancies plants which were admirably bloomed, and contained the usual kinds—Countess of Craven, Acme, Roi des Fantaisies, &c. In the amateurs' class Mr. Donald was first; and Mr. Weir, gardener to Mrs. Hodgson, Hampstead, was second.

Seedling Pelargoniums in both the Zonal and Greenhouse sections were shown in considerable numbers, especially in the former. The principal exhibitors were Messrs. Downie, Laird, & Laing in the Gold and Bronze sections. They evidently have the finest strain of this class, which promises to be so effective for bedding purposes. They received first-class certificates for Magnificent, Mrs. Lewis Lloyd, Miss Maynard, Black Knight, Beauty of Kent, Stanstead Beauty, and Mrs. F. Hepper.

Messrs. F. & A. Smith showed a fine collection of their tricolor-leaved varieties, comprising Jetty Lacy, L'Empereur, Prince of Wales, Princess of Wales, Louisa Smith, &c. Mr. Mann, of Brentwood, showed his fine Zonal Lord Derby, which fully sustains its character, and along with it The Baron (Nosegay), and other varieties. Mr. Turner had some beautiful Fancies, among which were Belle of the Season, light and very bright; Leotard, in the way of Countess of Craven, but larger and brighter; Princess Teck, white with bright spots, a most profuse bloomer. These all received first-class certificates. Amongst the large-flowered varieties, Troubadour (Foster), a beautiful soft flower in the way of Emperor, received a first-class certificate. Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, had Rosalind, which received a second-class certificate. Imperial (Hoyler), a fine dark flower, had a second-class certificate; and Lord Ronald, light rose, a first-class certificate. There were many other very good flowers, which will doubtless be seen in better condition as the season advances.—D., *Deal*.

Of stove and greenhouse plants in flower there was a magnificent exhibition, but as regards the kinds of plants shown not the slightest difference from former years. In point of perfection in growth, however, the specimens were for the most part all that could be desired. Mr. Peed, gardener to Mrs. Tredwell, Lower Norwood, who took the first prize in the class for sixteen, had *Aerophyllum venosum* in fine condition; a large plant of *Dracophyllum gracile*, with charming heads of white flowers; a very large Erica Cavendishii, Erica ventricosa magnifica, Eriostemon baxifolium and nerifolium, Epacris miniata splendens, Francisca confertiflora, two Azaleas, Tetratheca eriofolia, Aphelexes, Allamanda cathartica, Polygala acuminata, and Chorozema varium nanum. Mr. Donald, gardener to J. G. Barclay, Esq., Leyton, came second with another very fine collection, containing fine examples of Clerodendron Thomsoni Balfourii, Pimelea Hendersoni, Adenandra fragrans, Polygala acuminata, Stephanotis floribunda hardly sufficiently advanced, Statice imbricata, Rhychospermum jasminoides, Boronia tetrandra, Dracophyllum gracile, and very large specimens of Eriostemon linearifolium and Epacris grandiflora. Mr. Kemp, gardener to the Duke of Northumberland, Albany Park, Guildford, was third, and had among others a plant of Leschenaultia biloba major, of which the intense blue flowers were very conspicuous; the showy scarlet Erica westphalingia, and Allamanda grandiflora, not large but very fresh. Mr. G. Wheeler, gardener to Sir F. H. Goldsmid, Bart., Regent's Park, was fourth.

In the nurserymen's class for ten Mr. Williams, of Holloway, took the first position with a remarkably fine specimen of *Dracophyllum gracile*, which, measured across its curved head, could be little if at all less than 6 feet over; Clerodendron Balfourii; Ixora salicifolia, but not equal to one exhibited some years ago at the Regent's Park; Rhychospermum jasminoides, an Aphelexis, and Phorocoma prolifera, the latter not sufficiently advanced. Mrs. Glendinning & Sons, of the Chiswick Nursery, were second with very good specimens of *Aerophyllum venosum*, Pimelea spectabilis, a balloon-trained Kennedyia mophylla, Stephanotis floribunda, Heaths, Azaleas, and an Aphelexis. Mr. Baxendine was third, and Mr. Rhodes, Sydenham Park Nursery, fourth.

In the corresponding class for amateurs Mr. Peed took the first prize with a splendid specimen of Allamanda grandiflora, Azalea Coronata, a fine mass of rosy crimson flowers; *Aerophyllum venosum*, the white-flowered Erica tortuliflora, Francisca calycina with flowers nearly 4 inches in diameter, and splendid examples of Ixora coccinea and Clerodendron Balfourii. Mr. J. Wheeler, gardener to J. Philpott, Esq., Stamford Hill, Mr. Wilkie, Oak Lodge, Kensington, and Mr. Kemp, were respectively second, third, and fourth. The plants which they exhibited were mostly the same as those already named, with the exception of Coleonema rubra, Boronia serrulata, and Bougainvillea glabra, which formed a change from the ordinary run of the plants exhibited.

In the class for six plants, Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton; Mr. Carr, gardener to P. L. Hinds, Esq., Byfleet; and Mr. Wilkie, took prizes in the order in which they are named; whilst equal fourth prizes were awarded to Mr. Woodward, gardener to Mrs. Torr, Ewell; and Mr. J. Wheeler, Stamford Hill. Among the plants exhibited in this class were several very good specimens of Clerodendron Balfourii, Stephanotis floribunda, Dracophyllum gracile, Genetylis tulipifera and fuchsoides, Heaths, Aphelexes, Chorozemas, and Epacris.

Of mixed collections of fine-foliaged and flowering plants, the successful exhibitors were Mr. Williams and Mr. Young, gardener to W. H. Stone, Esq., M.P., Havant, who were severally first and second;

Mr. Peed and Mr. Tanton, Epsom, to whom equal third prizes were awarded; and Mr. Gell, gardener to Mrs. Beaufoy, South Lambeth, who was fourth. Mr. Williams contributed the Variegated New Zealand Flax, with fine, boldly-striped foliage, the Variegated Aloe-leaved Yucca, a magnificent specimen of Croton angustifolium, but not so beautiful in colour as when exhibited by him last year; C. variegatum; a very large and fine Latania borbonica; Cordyline indivisa with a thick stem; and of plants in flower a fine specimen of Clerodendron Thomsoni, Rhychospermum jasminoides, and others. Mr. Young sent a broad-leaved Theophrasta, Sphaerogyne latifolia, a very fine specimen of Dracana terminalis, Cycas revoluta, a Zamia, besides, among flowering plants, a good Aerophyllum and Aphelexis. Mr. Tanton had in his collection a beautiful specimen of Allamanda grandiflora, Epacris Eclipse, in fine bloom; Pandanus elegantissimus, Dracana Cooperi, and a very fine Cyperus alternifolius variegatus; and in that from Mr. Peed, Sphaerogyne latifolia was in fine condition, besides which we noticed a very large and fine specimen of Gymnogramma chrysophylla, Crotons, and the variegated Ananassa.

Heaths were numerous shown, and many of the specimens were very fine, though in kind very nearly the same as in previous years. In the class for ten Messrs. Jackson, of Kingston, were first, and had Ventricosa coccinea minor, a fine lushy specimen in beautiful bloom; Depressa multiflora, Beaumontiana, white, tinged with blue; a large lushy plant of Cavendishii, the pretty waxy white Perspicua nana, Tricolor Wilsoni, and Candidissima. In the collection of Mr. Rhodes, who was second, were fine specimens of Ventricosa coccinea minor, Tortuliflora, Cavendishii, Esquisite, not however in a sufficiently advanced state of bloom, Profusa, and Eximia superba. Mr. Williams, who was third, also contributed some good specimens, and from Messrs. F. & A. Smith came a collection to which a fourth prize was awarded. In the amateurs' class for eight Mr. Peed sent among others fine examples of Profusa, Eximia, Perspicua nana, and Esquisite, taking the first place in the prize list, and from Mr. Ward, who was second, Candidissima and Fairrienna were both very pretty. The third and fourth prizes went to Mr. J. Wheeler and Mr. Kemp, the former showing Alberti nana, a fine buff, and in this instance so high-coloured as almost to be orange. The prizes for six plants went to Mr. Ward, Mr. Peed, Mr. G. Wheeler, and Mr. Carr, who each exhibited well-grown plants in good bloom.

Azaleas, as a whole, were not the magnificent pyramids of bloom such as Mr. Turner and Messrs. Veitch used to exhibit, and it is only such specimens that can be shown to advantage in the transept of the Crystal Palace, for the great height of the building has a dwarfing effect to the eye, making what in reality is high look small, although Mr. Wilkinson does his best to remedy this by arranging the plants as near the galleries as possible. Mrs. Glendinning & Sons had the best eight in the nurserymen's class, showing well-bloomed large plants of Murrayana, Coronata, Distinction, Iveryana, Alba lutescens, Enallie, Optima, and Extrane, the last very full of bloom; and Mr. Williams was second with a nice group of pyramidal closely-trained plants. The best eight in the amateurs' class came from Mr. Carson, gardener to W. R. G. Farmer, Esq., Chesham; Mr. Penny, gardener to H. H. Gibbs, Esq., Mr. Gell, and Mr. G. Wheeler being the other successful competitors. For six Mr. Penny was first with well-grown plants of Criterion, Napoleon, Bride of Abydos, Halford, Iveryana, and Duke of Devonshire. Mr. G. Wheeler, who was second, furnished a densely bloomed pyramid of Iveryana; Mr. Wilkie was third, and equal fourth prize were awarded to Mr. J. Wheeler and Mr. Woodward. In the nurserymen's class for six Mr. Turner and Messrs. Lane took equal first prizes. The former had Comte d'Hainaut, salmon rose; Etoile de Gand and Variegata superba worked together; Beauty of Reigate, Louise Van Baden, Madame C. Verschaffelt, Mars, and Belle Gantoise, delicate pink with a crimson blotch. Messrs. Lane sent Advance with large rose-coloured flowers with a crimson blotch, Variegata, Semiduplex maculata, Latentia, Chelsoia, and Magnificent.

Of Rhododendrons, in pots, the only exhibition came from Messrs. Lane & Son, who had a first prize for well-bloomed plants of Ernest Jones, white, with a lemon blotch; Prince Albert, chocolate maroon, Atroragineum, and several varieties with flowers of different shades of blue.

Orchids were not very numerous shown, but were so attractive to the visitors in the afternoon that it was only by dint of great patience and much maneuvering that they could be approached. Mr. Penny, who was first for twenty, had a fine example of the beautiful Odontoglossum Alexandre, O. Pescatorei, which it very closely resembles, and naviu majus, richly speckled; Oncidium sarcodes, one of the handsomest Oncids exhibited, O. crispum, Saccolabium curvifolium, Phalaenopsis grandiflora, Cypripedium barbatum superbum and villosum, Lelia cinnabarina, always very effective by its colour, especially when the specimen is fine; Calanthe vestita, Vanda tricolor superba, and others. Mr. Gedney, gardener to the Rev. W. Ellis, Hoddesdon, was second with an interesting collection, in which were the pretty Chysis Linnaeana, Vanda teres, Vanda suavis, Calanthe massee grandiflora, Cypripedium Lowii, villosum, and Stonei; a finely-coloured Cattleya citrina, C. superba, and Chysis bracteata. In the nurserymen's class for ten, Mr. Williams, who took the first prize, had Cattleya citrina with eleven flowers, fine Ardisia, Saccolabium, Odontoglossum citrosanum, and Cypripedium. Mr. Bull, who was second, had a good Trichopilia tortilis, Cattleya citrina, and Cypripedium Lowii. For twelve Orchids, Mr. Wilson, gardener to W. Marshall, Esq.,

Enfield, was first with a remarkably fine collection, in which were *Cypripedium caudatum* with fifteen flowers, and *C. villosum* with thirteen, *Lelia grandis* conspicuous by its nankeen flowers, *Dendrobium nobile*, *D. densiflorum album* with fine spikes of its white and orange flowers, *Eriopsis rubralibon*, *Odontoglossum luteo-purpureum*, and *O. citrosanum*. Mr. Young, who was second, had in his collection the brilliant orange-scarlet-flowered *Epidendrum vitellinum*, some excellent *Oncidium*s, *Arides*, and *Odontoglossum*s. Mr. Peed was third, and Mr. Burnett, gardener to W. Terry, Esq., Fulham, fourth.

New plants were shown in considerable number by Messrs. Veitch, Mr. Bull, Mr. Williams, and Mr. Wimssett, but nearly all of them have been noticed in previous reports. First-class certificates were awarded to Messrs. Veitch for *Colens Saundersii*, *Scottii*, *Batemanii*, and *Bausei*; *Alocasia Jenningsii*, *Dracena Macleanii* with very dark reddish olive leaves, *Dracena regina* with large leaves margined with pale yellow, *Dracena Moorei* and *Chelsoni*, *Retinospora filicoides*, and *Francisea calycina major*. Mr. Bull had similar awards for *Cibotium regale*, with the stem covered with brownish yellow down like a chignon, *Enecephalartos gracilis*, and *Colens Beauty*; Mr. Williams for *Cibotium spectabile*, *Zamia Ghellinckii*, and *Cocos Weddelliana*; and Mr. Wimssett for *Colens Marshallii*.

Among miscellaneous subjects, Messrs. Carter & Co. exhibited at the end of the Palace next the late tropical department a mixed collection of plants, consisting of Orchids, stove and greenhouse plants, and various subjects with ornamental foliage, including *Echeveria sanguinea* with reddish chocolate-coloured leaves, and *E. metallica* with pinkish mealy-looking foliage. The whole being very neatly arranged, formed a very attractive termination to that end of the Show. Messrs. Paul & Son contributed fine boxfuls of cut Roses; Mr. Turner a collection of Roses in pots, Azaleas, and *Lilium auratum*; Mr. Bartlett, of Hammersmith, *Hoteia japonica*, and standard *Fuchsias*; Messrs. Ponsford, Brixton, a collection of hardy Ferns; Mrs. Glendinning & Sons, excellent pans of *Anacochilis*; Messrs. Walking, Perkins, Wimssett, F. & A. Smith, Downie & Co., and Mr. Paul Variegated Zonal Pelargoniums; Messrs. Downie & Co., and Mr. Bragg, Pansy blooms; Mr. Gardener, Eaiting Park, Stratford-on-Avon, *Elrue Nectarines* and Royal George Peaches, and Mr. Schater, gardener to the Earl of Pembroke, three dishes of Cherries.

ROYAL BOTANIC SOCIETY'S SHOW.

MAY 27TH AND 28TH.

THE first Show which this Society has held during the present year opened yesterday, and will be continued to-day. It is our pleasing duty to record, that though a two-days exhibition, and, therefore, some exhibitors who would otherwise have come forward may not have done so, it fully maintains the high reputation which the Society's shows have established in former years. The great exhibition tent presents as usual a lovely scene, in which magnificent flowering plants, bold and lofty fine-foliaged plants, and graceful Ferns alternately catch the eye. Mr. Turner, of Slough, sends Azaleas, which for their size and perfection have probably never been equalled. These consist of *Illustris nova*, magnificent, scarlet; *Variegata*, Optima, Holfordi, rosy purple; *Gledanesii*, Sir Charles Napier, and *Iveryana*. From amidst the densely-set flowers which these specimens present, peep forth the light green leaves just often enough to relieve the mass of colour which the flowers present, and to enhance instead of diminishing their effect. The same exhibitor sends in a collection of smaller plants, *Duc de Nassau* and *Juliana*, the one bright rosy purple, the other a well-known scarlet, and each very fine. Mrs. Glendinning and Sons and others also send fine specimens.

The Roses furnished by Mr. Turner, Mr. W. Paul, and Messrs. Paul & Son include plants of *Anna Alexieff*, *Junio*, *Souvenir d'un Ami*, *Madame Willermoz*, *Compe d'Hebe*, and *Lonise Odier*, such as have rarely been seen before.

Of fine-foliaged plants, Mr. Fairbairn, gardener to the Duke of Northumberland, Sion, has a superb collection, in which we particularly noticed a very large specimen of the *Coccol Palm* (*Cocos nucifera*), and *Alocasia metallica* and *Anthurium acule* are remarkable for the size and fine condition of their leaves. Mr. Williams has fine collections of ornamental-foliaged plants, Ferns, flowering plants, and all these mixed, and in one of them a *Dicksonia antarctica*, which cannot be less than 8 feet in height from the ground to the top of the black trunk, at least 10 inches in diameter, from which spring its graceful fronds. The collections of stove and greenhouse plants in flower are numerous and good. Of Orchids there are several fine collections, especially one from Mr. Wilson, gardener to W. Marshall, Esq., and another from Mr. Gedney, gardener to the Rev. W. Ellis. Pelargoniums, both Show and Fancy, are excellent, and new plants are well represented in collections from Messrs. Veitch and Mr. Bull, besides which there are numerous new florists' flowers.

REPOTTING THE AURICULA EARLY.

To those who have their fresh soil ready for use my recommendation is, after the middle of July arrives lose no time in commencing repotting; get that part of the business finished before July is out. The old notion is that August is quite soon enough to repot, and in my time I have neglected and have

known others neglect potting till the end of August or beginning of September. Now that is the old system, silly as it is old, like many other bygone notions; practice and common sense teach differently. The Auricula, like many other kinds of plants, requires proper treatment at the proper time; the benefit of potting early I found out years ago, and I know other parties who have taken my advice in that matter can testify to its truthfulness. Neglect the plants till the middle and latter end of August, the old mould gets dry and finished up; the plants suffer; the fresh fibrous roots, which they ought now to be pushing, are drying off in consequence; while if planted early, while vegetation is going on, the new, fresh, and wholesome soil encourages and stimulates, as it were, new life in the plants, and while the growing season is on, they are establishing themselves, and being made fit for declining autumn and coming winter. — JOHN HERWORTH, *Huddersfield* (in *The Gardener*).

VISITS TO GARDENS PUBLIC AND PRIVATE.

MR. SAMPSON'S NURSERY, NEAR YEOVIL.

I do not know, even in the pleasantest parts of the west of England, a more pleasant-looking or prettier-situated town than the town of Yeovil. I had visited it some years ago; but being in the neighbourhood during my recent visit to Sherborne, and having heard much of the establishment of Mr. Sampson, especially in its manufacturing of bedding plants, I determined to drive over and see it; and a charming drive it was, the hilliness of the road, which made it unpleasant to the driver and the horse, making it all the more interesting for those who were driven. The town itself looks clean and thriving, and is situated on rising ground, standing up in the middle of a rich and fertile valley. Mr. Sampson's nursery is situated outside of the town at about a mile distance, while his own residence, where he has some more ground, is further off.

One is struck in visiting such establishments as these, in what one may, without giving offence, I hope, call out-of-the-way places, with the great increase in the interest in things horticultural that has taken place within the last few years; and with all the faults of the bedding-out system, great as they are, it must be credited, I think, with a good deal of this. Everybody must do a little like his neighbours—must have his or her bedding Pelargoniums, Verbenas, Calceolarias, &c.; but everybody has not the means of growing them, and hence must apply to some neighbouring establishment, and very often, indeed, to one afar off for the means of gratifying his taste. So when Mr. Sampson took this nursery there was but one house—that, indeed, a large one—while he has now several, has added a long show house for the purpose of displaying the plants when in bloom, and has myriads of bedding plants in all stages of growth and size; while in order to enable him to carry out the system he has adopted in full favour, he has secured the valuable services of Mr. Peter Drummond, one of those enterprising and clever Scotchmen to whom we owe so much in horticulture.

This long show house is arranged in a novel and effective manner. The stage on which the plants are placed is not elevated, at least not more than a foot from the ground. This platform is made of bricks, and the interior filled in with gravel, &c. The plants stand on this, are thus kept cool, and are below the level of the eye, and the whole mass of verdure and flowers can thus be seen without any interruption. Azaleas, Camellias, and Cinerarias at the time of my visit had just gone out of bloom, and Calceolarias, Pelargoniums, &c., were just coming in in full force, and would soon make the house lively; but the bedding-out plants formed the chief feature of the establishment, and to them mainly the old house was allotted, while in a new propagating house their manufacture was still going on. All the newest and best varieties of the various plants used were here to be seen. Immense numbers of Mrs. Pollock made one end of the house gay, and Verbenas of the best and most approved kinds were to be seen in thousands. Mr. Sampson also possesses a very excellent bedding Lobelia, which for size and sturdiness of growth is far superior to any that I have seen, although I have not seen the new Lobelias of this year, about which so much is said—viz., *Trentham Blue*, &c. Like most of our growers, Mr. Sampson has something to say to variegated Pelargoniums, grows all the best of the tricolor kinds, and is essaying something in the seedling way himself, especially in the gold and bronze section.

Among the noticeable plants in the houses were three or

four of the largest specimens of *Cereus truncatus* that I have ever seen, and every season these magnificent plants show hundreds of blooms, and are a perfect sheet of flower. They have been offered, I believe, by Mr. Sampson to H.R.H. the Prince of Wales for Sandringham. They would not be out of place in the finest collection in the kingdom.

The out-door department displays the same vigour and

energy that characterised the in-door department, and although not extensive, was well arranged. Roses are in some degree attended to, and will ultimately have a larger share of Mr. Sampson's attention. My visit was necessarily a very hurried one, and not at the best time to see an establishment like this. Later in the season I may hope to see it again.—D., Deal.

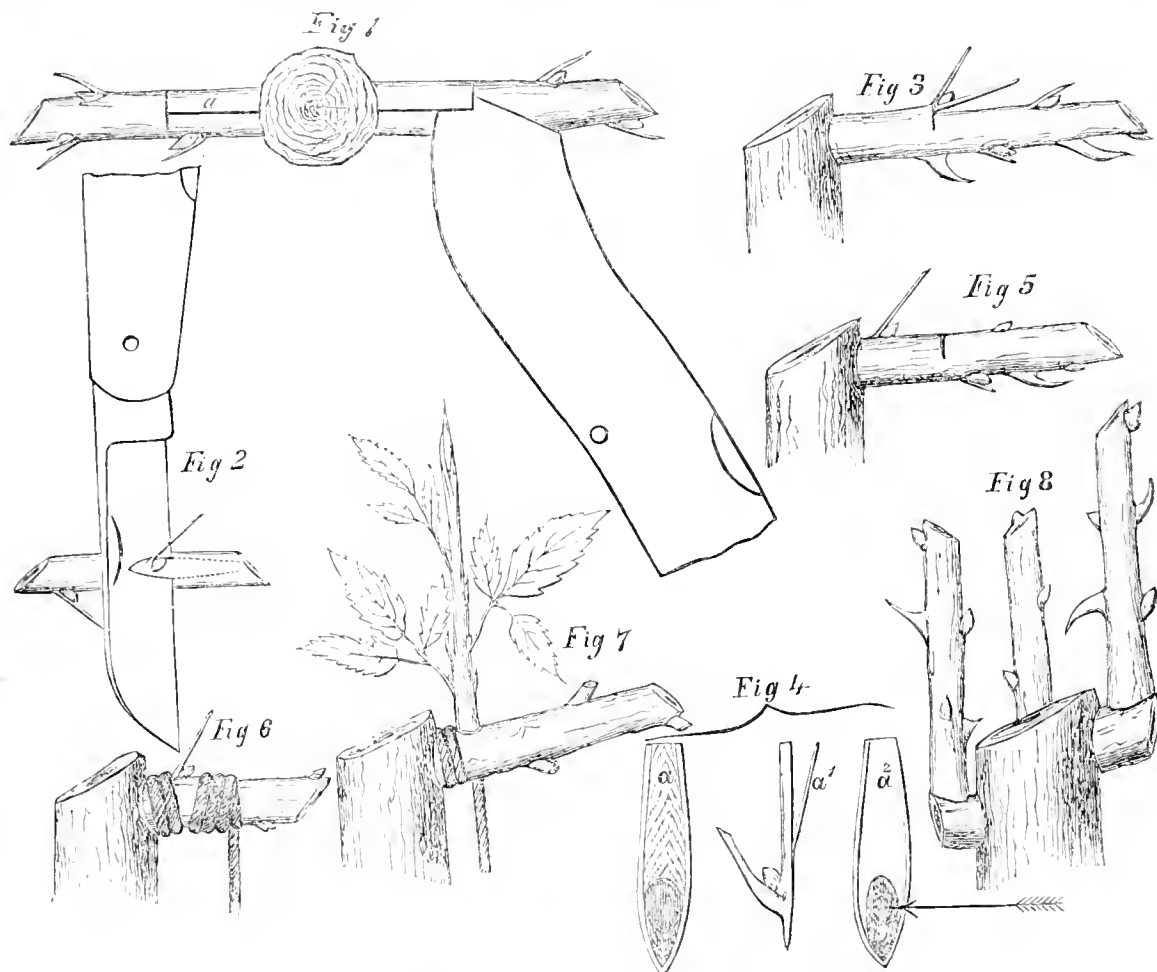
ROSE-BUDDING IN JUNE.

Being a great lover of Roses, and knowing that the pages of your Journal are scanned by many thousands of those who also delight in cultivating this lovely flower, I send you a short account of a method of budding in June which I have invariably found successful.

In October I select and plant what stocks I require, and when in the spring they commence growing I pinch or rub off all the shoots except two, three, or four, according to the strength of the stock; those remaining I allow to grow to their utmost extent.

I ascertain the time they are ready for budding by rubbing off some of the thorns, and if these are easily detached I know the stocks are in the right condition. I then cut the shoots back, leaving on them three or four buds to the stock. In the

shoot to be budded I make a T cut (as shown in *fig. 1* at *a*), just through the bark, being careful not to injure either the wood or bark, insert the point of the handle of the budding knife gently into and along each side of the longitudinal cut (*fig. 1*), detaching the bark from the wood to allow of the insertion of the bud, for which it is now ready. Obtain the bud by choosing one which appears to be the fullest from a branch or shoot of the Rose to be propagated. Cut it off, as shown in *fig. 2*, take the wood out of it carefully, so as not to pull out the heart of the bud, insert it in the T cut under the bark, *fig. 3* (in *fig. 4* I have shown a large bud with the wood in *a*, the wood in course of removal at *a'*, the wood taken out, the heart of the bud being left, and to which the arrow points, at *a''*), push it close up, as in *fig. 5*, and tie firmly with wool



or ball lamp cotton, as in *fig. 6*. As the original buds in the shoots in which the bud of the required Rose has been inserted keep pushing I pinch them all off, in order to throw as much vigour as possible into the inserted bud, and am careful that no other shoots grow from the stock. When the inserted buds have grown the length shown in *fig. 7* I remove the tie. As I prefer to have blooms as soon as possible, I permit the inserted bud to grow as long as it will, and am often rewarded with flowers the same season. In the following April I cut back

this shoot, leaving only on it three or four good buds, as shown in *fig. 8*.

As many amateurs may not be aware of the foregoing plan, I have been induced to send you such an explanation of it as I trust will enable them to try it for themselves, and thus "steal a march," or rather a season, on their trees. Floriculturists are, I am aware, too busy at the indicated time, but this is not written for experts, but beginners.—T. J. S., Twickenham.

WORK FOR THE WEEK.

KITCHEN GARDEN.

KEEP this department free from weeds; one good weeding is better than three hoeings and rakings. Indeed, except for covering seeds or gathering off stones, the rake should not be much used in the kitchen garden. *Asparagus* will be much improved if the beds do not become dry till the berries begin to change colour in the autumn. *Lucks* are a very useful vegetable in winter, and this is about the best time to plant them out from the seed beds. *Onions* are often injured by being left too long in the seed bed, or too close together in the rows. Thin, sow, and plant succession crops as their different states indicate.

FRUIT GARDEN.

You cannot pay too much attention to thinning, stopping, and training the summer growths of fruit trees. Fig trees should have the points of the shoots that are rampant pinched out. This will cause the young fruit to swell better, and will have a tendency to render the shoots more fruitful. In making a fresh plantation, secure a dry situation, and keep the plant growing from one stem, as the sucker-like appearance which Fig trees generally present is a great drawback to their proper management. Vines in favourable situations should have the fruitful shoots shortened to an eye beyond the bunch, and these shoots so thinned that the Vines will be able to perfect the bunches.

FLOWER GARDEN.

All the China, Tea-scented, and Bourbon Roses that have been forced since last Christmas will now be on the decline, and should be well pruned back, and all the weaker shoots cut out entirely. There are many of them so free-blooming as to continue in flower for months, but it would be bad management to let them do so, as there will be no want of Roses for the next six weeks. If these plants were now repotted, shaking away the greater portion of the soil from their roots, and placed in a shady situation for about two months, pinching out what flower buds they make during that time, they would be in a fine condition for autumn use in the conservatory. Large plants of Sweet Briars that have also been forced throughout the winter, should now be entirely cut down to the surface of the pots and set in a shaded place. It will not answer to prune Briars that have been forced, like other Roses. They become so hard in the wood by being constantly deprived of their foliage, that nothing short of cutting down will bring them about again, but by this system the same plants will do for years and answer better than young ones. The very gayest bed on the lawn in autumn might be made by the following high-coloured Roses, which are of nearly the same tints of scarlet and crimson. Suppose the bed to be a circle, place *Gloire de Rosomone* in the centre, and tie it up to a stake, it being of a half-climbing nature; then a circle of *Cramoisie éblouissante* and *Cramoisie supérieure*, then *Henry V.* and *Saint Pierre*; the next circle of *Fabvier*, and the last, next to the grass, of *Psyche*, which is a Bourbon, but differs little from the rest in foliage. This is about the time to plant these out, and any Rose-grower can furnish a large bed of them for a few shillings, as they are all cheap varieties; indeed, their cheapness and their high colours are the reason for pointing them out. As we are at length likely to have a good soaking rain, it will not be necessary this week to do more than direct attention to former calendars, and urge the necessity of bringing the work up as soon as possible. Where the grass on lawns is much burned by the hot weather, it will assist it much in recovering its verdant hue to dress either with liquid manure, or some artificial manure considerably mixed with light sandy soil. A little lawn Grass and Dutch Clover seed thrown on previously to covering with soil will do much good, especially on spring-laid turf where soil to fill up the cracks is indispensable. Mow, roll, and sweep lawns and walks, and keep every thing and every place as clean as possible. Annuals may now be advantageously thinned, and the thinnings if not too large may be used for filling up gaps in the borders. Seedling *Auriculas* must be shaded from the glare of the midday sun, and especially watch the attacks of green fly, which usually secretes itself in the heart of the plant, and multiplies very fast in hot weather. Remove the insects as they appear. Place two or three flat oyster shells on the surface of the soil in the large pots; it prevents evaporation, and also saves the roots from being washed bare in watering them. *Polyanthuses* are very subject to the attacks of red spider; to keep these pests down shade the plants, and if in a bed keep the soil moist around them. Break off the capsules of *Tulips* to

strengthen the roots. The bulbs on the offset beds will soon be ready to take up should dry weather set in. Use every means before recommended to keep your *Carnations* and *Picotees* free from green fly. If the insects become numerous the bloom will suffer severely. Tie-up diligently and top-dress with some very rotten manure. Pinks do not appear so liable to the attacks of the green fly as the before-mentioned flowers. Water seedlings, and pull up those which are single or have serrated leaves. They are not only worthless, but their removal will benefit those which remain. Continue to put in cuttings of *Pansies*. Those slipped nearest the root succeed best, the thinner they are the better; strong shoots seldom make good plants. The stakes ought to be put to *Dahlias* without delay, and the plants will be better of a mulching of rotten manure.

GREENHOUSE AND CONSERVATORY.

New conservatories, where a collection of climbers has been planted this spring, should now be kept as hot as a stove, and as damp as water can make them day and night; it is bad policy to use the common routine for such a house the first season. We often hear of large conservatories becoming too hot and injuring the plants in summer, but it is the want of moisture in the atmosphere and not the heat which causes the mischief. All spare places and under the stages in any conservatory should now scarcely ever be dry. Plants in flower here must be constantly shaded while the sun is strong upon the glass. Ladies when viewing the large *Pelargoniums* at the metropolitan shows are often heard to say how much they would like to have some of their own plants trained in the same way. Nothing is easier if there are plenty of plants of each sort to be so trained. When the plants are just coming into flower put four or five of them into one large pot, keeping the best side of the plants outwards, and with a little training a specimen of any ordinary size can be made at once; and if the soil is good the plants will flower in this way much longer. Keep the greenhouse moist by frequent syringing; turn the plants round from time to time, that they may not become one-sided; and allow them to have plenty of room on all sides, which is the grand secret in growing these plants to perfection. The flower buds of such young plants as are intended to become specimens ought to be picked off in order to encourage their growth. There is nothing more general or more difficult to manage than attempts at growing and flowering these plants in the same house; but then they cannot by any possibility be grown to anything like perfection. House plants in our climate must have large portions of water thrown over or amongst them, to keep up a moist atmosphere while they are growing, and flowers will not stand this with impunity.

STOVE.

Clerodendrons, *Vineas*, and other stove plants intended to flower in the conservatory through the summer should now be removed to the coldest part of the house. There is hardly a stove plant which may not be thus inured in summer to flower in the conservatory. Most of the *Orchids* are well suited for this purpose, and as few ladies can endure the close heat of the stoves, unless the inmates of these houses are so managed their beauty is in a great measure lost.—W. KEANE.

DOINGS OF THE LAST WEEK.

We continued in the daily expectation of rain, which did not come until Friday and Saturday, when we were quite prepared for it. We well cleaned a second tank in good time, and should have been vexed if the pure soft rains had become mixed with what had remained for the greater part of eighteen months, with frequent additions from every shower. In the very dry days of the first part of the week, ending on the 23rd inst., two things struck our attention—first, the boldness with which all crops that had been surface-stirred or mulched met the heat and drought; and, secondly, the rapidity with which *Lettuces*, *Cabbages*, *Cauliflowers*, &c., grew in the latter warmer days of the week, when not assisted at all in the way of watering. The genial warmth made all the difference, the warm nights as well as the warm days. The sun was quite as hot in the earlier days of the week, but the air was drier, and more parching, and the nights much colder. All our smaller crops, as *Onions*, *Carrots*, *Farnips*, &c., had a good hoeing with the Dutch hoe, so as to leave the surface loose and clean.

Box Edging.—We shall not yet be able to do anything to ours, but from this to the middle of June is a good time for cutting it in rather freely, when that work is done only once in the season. After this time there will be little risk of frost

blackening the young growth, and the lines will look tolerably neat for the year; but, of course, not so well as those nipped several times in the season. Box will always have its admirers, just as anything that grows is to many more interesting than the inert thing that is made; but tiles and even slate make very neat edgings, and, requiring no annual labour to keep them right, they are ultimately much more economical than Box, and afford nothing like the same refuge and hiding place for vermin. Young straight Box edgings are best clipped square on the top, then a line strained tight in the centre, and the sides cut square or pointed to it. Edgings which are stronger and better established are often cut with the scythe. A good workman who can command alike a firm wrist and a good eye, will leave work behind him that would rival that of the best clipper, and with much less labour.

Sea-kale.—That which we planted out suffered from the dryness, and the best plants with bold and good crowns suffered much more than those set, which consisted merely of bits of roots with no perceptible bud, being merely pieces of the ends of roots from 4 to 6 or 7 inches in length. These, planted with merely the upper end about level with the surface, have thrown out several buds, green and flourishing, whilst many of the good plants with prominent buds do not look so flourishing as when put out, and will require this rain or a watering to give them their due advantage. In the case of the plants, they were growing a little before being planted, and the transplanting gave them a check, which we ought to have counteracted by two or three waterings in the dry weather, but these we could ill afford to give. The pieces of roots without visible buds had nothing to do but secure the moisture in the earth to preserve their vitality, and hence the warm weather, when it caused the latent buds near the surface to break, induced also the lower part to put out fibres to keep up a supply of sap to the expanding buds. This affords a proof that it is often best to move plants and trees when in a state of comparative repose, and that when moved in a growing state there should be as little check as possible involved in the moving. Had we done justice to these plants with buds, they would have been as much before these pieces of roots now as we have no doubt they will be a few weeks hence.

As the cutting season is now over, all the plants should be dressed and cleared gradually of their flower heads, except the plants intended to be left for bearing seed, and these should not be forced next season. We use the word gradually intentionally, as these flower heads make a delightful vegetable cooked in the usual way, and thus afford a change for a week or two. When this use is not approved of, then the heads may be cut off, and taken to the rubbish heap at once. Our Cauli-flowers are coming in nicely, but in the occasional break between them and Broccoli a basketful of Sea-kale flower-heads makes a good change at the hall table at least; and we have heard the most refined gentlemen speak highly of the dish, just boiled as a woman in a cottage would do, using boiling soft water, and a pinch of soda in the water.

One fact more. Against the convictions of our experience we planted out a number of the roots we had taken up to force first. These, however plump and fresh they look, seldom do well when planted out again. A good many thus treated have rotted away. In the dryness we would not have been surprised if they had shrivelled up a little, but they rotted. Now the plants thus taken up for forcing are useless afterwards in proportion to the earliness and the crops taken from them. Plants that yield later gatherings in spring, and are cut only once, do not suffer in the same way from being taken up. There is a simple way in which we can be independent of all such early-forced plants, even if we do not give ourselves the trouble to raise plants from seed, and there is generally a little trouble involved in this, first from rats, &c., purloining the seed, and then from birds and turnip fly making inroads among the young seedlings. In taking up plants to force in mild hot-beds, Mushroom beds, &c., the size of the head or top when we cut it for table will generally be in proportion to the thickness of the root, and the prominence and size of the bud or buds at its point, and but little in proportion to the length of the root. These tuber-like roots may be dug up with their rootlets to a length of from 12 to 18 or more inches, but we have always found that 6 or 8 inches in pots or beds just yielded as good gatherings as if the roots were double the length; nay, though we would not at present recommend the practice, yet we have found large roots of 3 and 4 inches in length yielded as good produce in such circumstances as longer ones. Supposing you took for forcing roots of from 6 to 10 inches in length, what a

quantity of the smaller roots, and even larger ones from a quarter to half an inch in diameter, would thus be cut off; and each of these cut into 6 or 8-inch lengths, and laid thickly along the ground in a trench, with the points out, and a little short litter over them during the winter, would be just suitable to plant out in well-prepared ground next spring, and the strongest might be forced in the first winter, and the weakest in the second. We are the more particular on this matter, because we know there are so many who consider Sea-kale to be a desirable luxury, but think that it is beyond their means, and we wish to show that any one may have it who can devote a few rods of the garden to grow it in summer, and that without mounds of fermenting dung in the garden in the winter.

Vegetable Marrows and Ridge Cucumbers.—Filled the trench and replaced the earth as alluded to lately, and the soil having become so warm by being exposed when dug out, we set some hand-lights on and planted at once, contrary to our general custom in such cases, which is to wait until the earth is warmed. In warm places there is little necessity for this care, but the old plan of producing a little heat below the ridge is good, and the heat can be easily supplied where there are stumps of winter stuff to be disposed of, a little long litter to be had, and mowings from the lawn to mingle with it. The litter neutralises and retains the heat from the grass, which otherwise would be too violent and evanescent.

Cucumbers.—Moved cuttings, seedlings, &c., from a couple of two-light frames over a mild hotbed, formed much as above stated, forked over the upper and sweetest portion of the bed, added a ridge of littersy manure and leaves all round so as to elevate the frame when put on, leaving a trench in the centre for the soil, and as that soil had been exposed to the sun of the previous hot days and well warmed, we turned out the strong plants at once, as the produce may be desirable, and we can dispense sooner with the early bed if we like. That two-light bed has borne wonderfully and almost exhausted itself, but on cutting most of the fruit, removing the older leaves, and giving it comparative rest for eight days, it is now breaking afresh with vigorous fruitful shoots.

Melons.—What we have said above about warmed soil, we would have put in operation with Melons in cold pits, but in one case we wanted the room for Beans, which we wished to turn out of a vinery, and in the other we could not raise at the time the bedding plants growing in the soil. The practice we intended following, and which we have followed successfully years ago, we may mention for the benefit of those who have a pit or frame that will now be emptied of the bedding plants, and who have no dung heap to afford the means for obtaining artificial heat beneath the soil for Melons. In such a May as this success would have been certain. We used to get the soil in the place fresh and rather stiff and not at all fine, and just a little rotten dung or leaf mould in it. This when it had remained for a day or two with the glasses shut, and exposed to the sun, would be turned over, and the operation repeated several times until the soil was well warmed throughout, the warming being accelerated by covering up the glass at night. With such treatment, and husbanding sun heat, Melon plants turned out in the end of May and the beginning of June with no artificial heat, yielded good returns early in autumn. We have planted out strong plants over slight hotbeds because we had the chance to do so, and in a dull season they will be more sure than if they had no artificial heat.

FRUIT GARDEN.

The rains will beat all our watering as respects Strawberries, and, in fact, these were tolerably well before the rains came, except the Black Prince, which showed signs of a little suffering, and which hitherto has been much valued for jam and other preserving purposes. We hope to litter a good many of our borders and quarters on Monday, and thus keep the moisture in and the fruit clean. A considerable amount of trouble is now requisite to keep up a good regular supply of Strawberries from under glass. We do not expect much from the open ground for three weeks. The earliest-forced ones planted out are beginning to show the flower buds, and will come in useful when the general crop is gone.

Orchard House.—Removed the earliest Peas, and the second and third will follow ere long, as the first-transplanted ones of the taller kinds out of doors are now coming in. Had the houses emptied of most of the flowering plants that stood beneath the trees in pots; and as these pots wanted much watering during the last three weeks, the mulching has almost disappeared, and must be replenished if possible next week. It is of no consequence if this mulching of rotten dung, &c., is

placed considerably above the rim of the pot if two things be insisted on, otherwise there will be risk of danger. First, in watering, the waterer must avoid jetting the water into what would soon be a hole close to the stem of the plant—a practice which, besides having a tendency to leave the outside soil unwetted, has ruined more tender plants than perhaps any other bad practice. The petting-high of hair-rooted plants might never have been so general if the waterer would have kept water from dashing against the stem, or rather collar of the plant. In the case of these mulched orchard trees let the water be poured over the whole of the surface, and more particularly be directed to the circumference rather than to the centre. Secondly, never be satisfied with the mere surface appearance, or even ringing the pots if partly plunged, but examine, with a finger or the point of a stick, a few inches below the mulching; otherwise you may have a moist surface and great dryness of the roots an inch or two beneath the surface. When used to it you can tell when a plant is in danger from this cause as you pass along; but until that aptitude is learned from observation there must be no disdaining to examine the state of the soil, which is better in every way than an indiscriminate pouring from the water pail. The mulching lessens the frequency of watering, and prevents hardening the surface soil too much, but it likewise conceals defects as to too much or too little moisture that can scarcely be found at first without such particular manual examination.

In other houses the work was much the same as in the previous week. We keep the late vinery warmer now, as the Grapes are coming into bloom. In a week or so we will keep the first orchard house closer and shut up sooner for the same purpose.

ORNAMENTAL DEPARTMENT.

Our work here has been heavy, consisting of rolling, mowing, clearing the lawn of Daisies with the knife, and digging and preparing beds and borders for planting. We remember the 22nd of May last year, and how we escaped by a little patience. The rain will cause the ground to work beautifully, and most likely we will turn a good many plants out next week before this is read. To beginners we may say, if we have much rain and the soil is at all heavy and stiff, avoid planting out when the surface soil is wet and claggy. If you do, you will repent it during the season. It will be months before such claggy soil becomes kindly. It is in every way better to wait until the surface has become rather dry. Of course our advice does not apply to small beds, where one can plant without even setting a foot on the bed. We know that the advice in many quarters is "Choose a rainy day to plant in." We say, on the contrary, On all stiff heavy soil that will run together when pressed wet, and not be easily disintegrated when dried, plant when the surface is rather dry, either before rain is expected or after it has come. In such a condition of the soil the work can be better, more quickly, and more comfortably performed.

Our second golden rule would be, Give time and care to the planting. When we did much more flower gardening than now, we one year could have boasted how very quickly we turned the whole out. We would never wish to have the power to make such a beast again. Of course, in rain or in sunshine a slit for a plant is soon made, the roots slipped in and the earth squeezed against them. It will be generally true economy to make first a hole or a trench, and give the roots full justice in having well-pulverised soil around them, without leaving the mark of a foot on the ground.

Our third rule would be, Water to moisten just a little beyond the roots, resurface with the drier soil, and avoid surface-watering, unless in some great emergency. The first watering will serve the plant for a considerable time; and if it shows a little distress, and you are sure there is moisture enough at the roots, give it a little help by shading, or wetting the foliage, merely to arrest a rapid perspiration—too rapid for the roots in their new quarters at once to meet.

American Plants.—In answer to "PUZZLED," who has a bed of Azaleas that looks as if dry, and which no watering seems to improve, Try what mulching will do; but before being satisfied with that raise a plant or two, and examine the ball carefully, as for orchard-house trees in pots. We once helped to make a valuable bed all right that seemed going beyond hope of recovery. The plants had been turned out of large pots into a bed of heath soil and sandy fibrous loam. On examination at the roots it was found that the plants had been turned out of pots with the balls dry, and all the barrels of water lavished on the bed had passed the balls like raindrops from the wing of a duck. The plants were lifted, their balls put standing in a tub of water for ten minutes after any air-bell had ceased to appear;

they were then replanted, and bloomed and grew beautifully the same season, and, as far as we know, ever afterwards. In raised beds, even established plants can scarcely have enough of moisture without mulching.—R. F.

COVENT GARDEN MARKET.—MAY 27.

A STEADY supply and a rather better demand for superior goods have been experienced during the past week. Strawberries from the open air in the western counties are now plentiful, there have also been large consignments from France with the other usual produce. Good early Peas from Kent and elsewhere are now in, as are also early Ash-leaf Potatoes.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples	½	sieve	3	0	to 5	0			
Apricots	doz.		2	0	4	0			
Cherries	lb.		2	0	3	0			
Chestnuts	bush.		0	0	0	0			
Currents	½	sieve	0	0	0	0			
Black	do.		0	0	0	0			
Figs	doz.		12	0	18	0			
Filberts	lb.		1	0	0	0			
Cobs	lb.		0	9	1	0			
Gooseberries ..	quart		0	4	0	8			
Grapes, Hothouse ..	lb.		8	0	12	0			
Lemons	100		8	0	12	0			
Melons	each		6	0	to 12	0			
Nectarines	doz.		10	0	20	0			
Oranges	100		4	0	10	0			
Peaches	doz.		18	0	36	0			
Pears (dessert) ..	doz.		0	0	0	0			
Pine Apples	lb.		8	0	10	0			
Plums	½	sieve	0	0	0	0			
Quinces	doz.		0	0	0	0			
Raspberries	lb.		0	0	0	0			
Strawberries ..	per lb.		4	0	10	0			
Walnuts	bush.		10	0	16	0			
do.	per 100		1	0	2	0			

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes	doz.		3	0	to 4	0			
Asparagus	100		3	0	8	0			
Beans, Kidney	100		1	6	0	0			
Beet, Red	doz.		2	0	3	0			
Broccoli	bundle		0	9	1	0			
Eras, Sprouts	½	sieve	0	0	0	0			
Cabbages	doz.		1	0	1	6			
Capsicums	100		0	0	0	0			
Carrots	bundle		1	0	0	0			
Cauliflower	doz.		3	0	8	0			
Celery	bundle		1	6	2	0			
Cucumbers	each		0	6	1	6			
Endive	doz.		1	0	0	0			
Fennel	bundle		0	3	0	0			
Garlic	lb.		0	8	0	0			
Herbs	bundle		0	3	0	0			
Horseradish ..	bundle		3	0	5	0			
Leeks	hunch		0	3	to 0	0			
Lettuce	per score		1	0	1	6			
Mushrooms	pottle		2	0	3	0			
Mustd. & Cress, punnet			0	2	0	0			
Onions	per bushel		3	0	5	0			
Parsley	per sieve		0	3	4	0			
Parsnips	doz.		0	9	1	6			
Peas	per quart		0	0	0	0			
Potatoes	bushel		4	6	5	0			
Kidney	do.		4	0	6	0			
Radishes doz.	bunches		0	6	0	9			
Rhubarb	bundle		0	4	0	8			
Sea-kale	basket		0	0	0	0			
Shallots	lb.		0	8	0	9			
Spinach	bushel		2	0	3	0			
Tomatoes	per doz.		3	0	4	0			
Turnips	hunch		0	4	0	6			

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

JOURNAL OF HORTICULTURE PRIZES (An Intending Exhibitor).—The first considerations with the Judges in awarding our prizes at the Royal Horticultural Society's Exhibition at Leicester, on the 16th of July next, will be the excellence of the fruits and the taste with which they are arranged. The exhibitors must find their own dishes. Seven dishes of fruit better grown and better arranged would be entitled to a prize in preference to any larger number deficient in these qualifications. There are no stipulations as to "points." The Judges will award the prizes to the collections which in their opinion are of the fruits best cultivated and most tastefully set upon the table.

LEICESTER SHOW (W. Williams).—Apply to Mr. Eyles, Royal Horticultural Society, South Kensington, London, W., and he will furnish you with every information.

PETERBOROUGH EXHIBITION (Harry Porter).—The wording of the schedule is so indefinite as to the classes you mention, that we cannot advise you. You had better consult the Committee.

FOWLS' DUNG AS A MANURE FOR ROSES (A Subscriber).—"You are in error in supposing that chickens' dung, old or new, solid or liquid, on the surface or next to the roots, killed your Roses. Roses planted this spring, if not properly planted and carefully attended to, and watered both over the foliage and roots, would probably die or suffer greatly. Fresh cow dung, solid or liquified, is admirable for almost all kinds of plants, especially for Hollyhocks and Dahlias. It is cool, does not contain much uric acid, and I never knew it injure anything to which it was applied. You had better mulch your freshly-planted Roses, kill the aphides, cut off the leaves spotted with orange and other fungus, thin out leaves where they are tangled, syringe the trees well, and apply water copiously to the roots. Honeydew is more abundant than I ever knew it before; it is a viscid secretion from the tree, of which insects are fond, but of which they are not the cause. It must be washed off, as it stops the pores of the leaves. Roses open here abnormally with green centres. Take them off at once.—W. F. RADCLIFFE, *Oxford Fitzpaine.*" A liquid manure made of 1 lb. of fowls' dung to each gallon of water would be the proportions we should employ, and give it once a week; and the same might be applied to ordinary bedding plants and culinary vegetables; for the latter 2 lbs. to the gallon would not be too much.

BLIGHTED ROSE TREES (C. D., Godalming).—"As far as I can judge of the smashed leaves sent, the blight appears to be mildew—white fungus. If you have only a few plants so affected you may on the first appearance rub it off with your finger and thumb. Some Rose-growers use sulphur

of the two kinds, black sulphur is the better. I use for Roses 2 ozs. of blue vitriol dissolved in hot water and then mixed with a stable bucketful of cold water. I know not how it may act on the leaves of other plants. When a tree is hopelessly mildewed I cut off the branches and leaves. I have thus treated a second time this season a tree of *Triomphe de Reines*, 12 feet high. With regard to inducing the seedling Hybrid Perpetual to bloom, do not attempt it if the plant is weak. If it is strong take off the points of the shoots and side branches. W. F. RADCLIFFE."

GRAPE *Nottinghamensis*.—The Muscat Eschodra is the same as White Muscat of Alexandria. We consider Schiras a very excellent early Grape. Is yours the true one? We cannot discern what look your third question refers to.

PEARS DESTROYED BY INSECTS. (W. S.)—The beetle-like insect which destroys your orchard-house Pears by eating through their stalks, is the *Cureulio macularis*, or Spotted Weevil. It conceals itself in the soil during the day, and feeds at night. Your best remedy is to shake each tree over a white sheet at night, and destroy the insects which fall upon it. If this be repeated on two or three successive nights you will exterminate the marauders.

EARLY PEA.—Mr. G. Edgerton, Strawberry Hill, has enclosed us (May 20th) some pods of Dickson's First and Best early Pea, and says he finds it about a week earlier than Sangster's No. 1, and several other varieties, sown January 20th in pots, and planted out on the first favourable opportunity.

WIREWORMS (*Agelias*).—We do not know of anything that will destroy wireworms without causing injury to the crop. If, when you sow Peas, &c., you were to give a good dressing of soil, and were to point it in where the rows are to be, it would in a great measure drive the wireworms away from the Peas. You might also make a number of holes along the sides of the rows of Peas, drop into each a potato, and cover it with soil. These may be examined twice or thrice a week, and the wireworms destroyed. It is well to thrust a stick through each potato, for it will serve both as a mark and a handle by which to pull the bunts up for examination.

CALANTHE VESTITA (S.).—The young growths of the present year will form the silvery bulbs of next year, and from their base will proceed flowers this or next year if they be properly nurtured. The present silvery bulbs will die away after they have flowered, or when new growths have been produced by them; but they may not die for some time after the new bulbs are formed. It is not likely they will flower in autumn, or that new growths will proceed from them next season. It is quite unusual.

CELOGYNE CRISTATA WEAKLY (*Idem*).—We think your plant is weak, and that last year's growth was very poor; but according to your description it is progressing favourably, and will, with encouragement, produce a better growth and bulb this season.

DENDROBIUM NOBILE LEAVES BROWN (*Idem*).—The leaves turn brown and rapidly decay from their being kept in too cool an atmosphere, and from being too much watered over. Give more heat and maintain a moist atmosphere, avoiding the wetting of the leaves to such an extent as to cause water to hang upon them.

PLUMS NOT SWELLING (K. K.).—We can only suppose that your tree has suffered like many others from frost, and that we believe has been the cause of the fruit falling shortly after setting. We have not a heavy crop on our standard, bush, and pyramid trees, although they gave great promise. On trees against walls we have a splendid crop of Plums, and the fruit is larger than we remember to have seen it in May.

BUDDING PLUM TREES (T. T. S.).—Plum trees are best budded; indeed, grafting Plums is not general. The best time to bud is as soon after the middle of June as the bark parts readily from the wood. All budding is done in the same manner as for the Rose, only Plums are budded about 6 inches from the ground and on the side of the main stem.

BUDDING ROSES (*Old Subscriber, Ireland*).—There is no pamphlet on Rose budding, but you will find full particulars in Rivers's "Rose Amateur's Guide," published by the Messrs. Longman. Thomson's styptic is not necessary for budding Roses, but it may be used for the purpose, and is thought by some to be an advantageous application. It may be procured of any seedsman.

THINNING NECTARINES (D. W.).—You should reduce the five hundred Nectarines on a tree 15 feet by 6 feet, to half that number; but if your tree is not very vigorous, we would not have more than two Nectarines per square foot, or 150, and if weak we would reduce the number to 150.

CROP FOR A VINE (*Idem*).—Your Vine with three rods will certainly bring to maturity twenty-four bunches, better than a Vine with the same number of bunches on a single rod; but you must bear in mind that the size of the bunches has much to do with the quantity that may be left on a Vine. If you have large bunches on the Vine with three rods, then you must not expect them to arrive at the same degree of perfection as if less bunches were on the Vine with a single rod. If you have large bunches you must allow fewer of them to remain than were the bunches smaller, for a Vine with but eight bunches may give a greater weight of Grapes than one with twenty-four bunches upon it.

BOILERS (*Imitator*).—Your boiler may be a very good one. One characteristic we contend for is simplicity, and we are also of opinion that the setting and the management are more important than the mere form of the boiler. Most boilers that need no brickwork, unless supplied with an air-tight jacket, waste heat much more than if set in brickwork, for what is absorbed by the brickwork will be radiated back again. Boilers without brickwork are chiefly useful in small places, and where moving the boiler and all appurtenances is a matter for consideration. A large boiler on that principle we do not look upon as economical so far as heating is concerned. (*Anxious Inquirer*).—We think that water tubes are not so good for firebricks as iron bars where inferior fuel is used. Your obtaining so high a temperature so easily at one time, and the difficulty of getting the water warm at another time, show that there is something different in the management. If one course of management will so easily heat the water, we can see no reason why that should not be done again if the same draught is secured, and most furnaces require cleaning out, to clear out clinkers, &c. By the management of the furnace bars, a brisk or a slow combustion can be obtained. In the one case keep them open for air, in the other keep them comparatively close to exclude much air. We prefer a little small coal to mix with coke in lighting, and the

little extra smoke is counterbalanced by the quickness of ignition. If this is not allowed small broken coke should be kept on purpose for lighting. If you become fireman because your young men cannot manage the fires, there will soon be something else they cannot do.

CUTTINGS OF GOLDEN CHAIN PELARGONIUM (C. P.).—There are two periods for striking Golden Chain first, in July and August, in sandy soil in the open air; and in February, March, and onwards, in a hotbed. We cannot say why your *Musros* mis after showing do not grow, but we would reduce the temperature of the house to from 50 to 60, seldom above 55, and see that the soil do not want for requisite moisture.

ROSE TREE WITH PENDULOUS BRANCHES (P. S.).—No Rose except a drooping or weeping one will long endure having the principal branches drooping down. If you have not irretrievably injured the *Solfaterre* Rose, pruning it and allowing the shoots to grow upwards, or at least not below the horizontal, will give it a chance of recovery. If you wish to cover to the pot with such a Rose, you must not have a standard, but shoots as low as the rim of the pot.

FLOWER BEDS (*Jackman*).—We neither exactly know what you aim at, nor the position of the beds. The following would look well in the beds, each 10 feet in diameter, and each having four bands and a centre—thus, first bed, 1st row, Venus's Looking-glass and Virginian Stock; 2, *Silene pendula*; 3, Yellow Hawkweed; 4, Blue Branching Larkspur; 5, Prince's Feather. Second bed—1, Yellow Heart-ease; 2, Blue Nemophila; 3, White Candytuft; 4, Lobel's Catchfly; 5, *Delphinium formosum*. Third bed—1, Purple and blue Heart-ease; 2, Tom Thumb Yellow Tropaeolum; 3, Purple Jacobaea; 4, White and Blue Branching Larkspur; 5, Lobel's bleeding.

PEACHES FALLING (*Old Subscriber*).—Want of ripeness of wood, owing to the strong growth, is, no doubt, one of the reasons why your fruit buds fall and do not set. Try what less watering will do; if that do not give firmer wood, and root-pruning in winter is so ineffectual, try lifting and replanting the trees in the first days of October. We do not like such root-pruning in summer, but we have done a little to over-vigorous trees with advantage. See "Doings of the Last Week" of May 21st, on thinning buds, &c. Watering with guano, or with lime and soot water, will scald the ants from your houses. Sugar and arsenic mixed together in a saucer, and a saucer put over it, with a thin slip of wood between the two, to leave room for the ants and for nothing larger to enter, will soon put an end to those which partake of such a dainty.

PEACHES, &c., IN ORCHARD HOUSE (W. H. Doughty).—See the previous reply, and we also refer you to "Doings of the Last Week" in last week's Journal as to thinning buds and fruit. We think two circumstances are against you—the smoke of the town to which you are so near, and the using old kitchen garden soil for your orchard house, especially after so well securing drainage, &c. Meanwhile we do not see anything wrong in the colour of the foliage, and a little soot water would help to make it darker. As the trees grow so well and strongly they cannot be much hurt by the soil, though we would prefer it fresher, but our own trees are just in the old border. However, as the bushes do best, it shows the soil is not so much at fault as free growth, and if these pyramids were ours, and we could not ripen them, we would lift and replant in October. The size of the wood does not look as if they were too luxuriant, and it strikes us that your soil may be rather dry in winter and spring before the bloom opens. Try what a little more moisture will do. The specimen shoot of *Nectarine* sent seemed to indicate that the fruit had too much exposure to the full sun, and the small fruit showed the tree was also making a selection for itself. Try a thinning early in spring of the buds that cluster thickly; but above all, see that the soil is moderately moist before the buds begin to swell; and to hasten the maturation of the wood give little water, and a dryish atmosphere after you gather the fruit.

GRUB, &c. (*Answer*).—How to get rid of the "grub" that is eating up your *Cerastium* plants, is a question difficult to answer, not knowing what insect your mean by "grub." If it is the larva of the cockchafer that has eaten up the roots below the surface, then we can advise no better plan than to take the *Cerastium* up, examine every bit carefully to see that there is no fat grub concealed in it, remove the soil to the depth of a foot, and add fresh before planting. Before doing so try what a strong watering of lime and soot would do. Birds are our best friends for thinning these marauders, and, as they remain in the larva state fully three years, the destruction they do to crops, to potatoes, and even to such ornamental plants as *Cerastium*, is very great indeed. The wireworm is even a worse larva if possible, as it exists in that state some five years, but a little for scattered on the ground and to the ground will generally send it off, and when present among crops, Potatoes and Carrots may be inserted in the soil as traps, and be examined every morning. The Musk plant will make a good bordering for bedding Pelargoniums and other things, but unless well watered it will die down early in the autumn. The herbaceous plant enclosed is *Arabis alba variegata*. The variegated *Vinca* makes a good edging plant.

WHITE BLOTCH ON PEACHES (*Idem*).—We think you must have had a little mildew on the Peaches last season, and that has increased this season. The blotches on the fruit are either the result of mildew, or of the sunstroke when the fruit was wet, and little or no air admitted to the house. We think it is mildew, and in that case would dust the parts with sulphur, dash sulphur paint on any open parts of the wall, give more air, and keep the atmosphere drier.

PRUNING LAURENTS (W. H. D.).—The Laurents may be pruned in winter, but better still in spring, before the buds break, but when they show signs of moving. If for timber and planted rather thickly they will need no pruning, and if for picturesque ornament they will merely need a little regulating, and that will often be as well let alone.

GOLDEN FEVERFEW (*Idem*).—The Golden Feverfew makes a good bedding plant, and will do best as an edging. It bears nipping or cutting to any height well.

ANTS (M. A. E.).—Ants do harm in greenhouses and beehouses, especially where fruit is grown. A little sugar and arsenic, either dry or in a liquid state, will tempt them. Cover it over to keep animals getting to it, leaving an opening, say of one-eighth of an inch for the ants to enter. We have also put honey and water in a pot, and then the honey stuck on their legs and trapped them by hundreds. Watering their haunts with guano or other ammoniacal water will expel them. A gentleman lately

told us that ants kept down the green fly in his houses, but we do not believe it. The artful busy ants treat a fat green fly much as we treat a milch cow, and in either case, fly or cow, are too valuable to be destroyed by those who are nourished by either.—R. F.

EUCODONOPSIS NAGELIODES (A. Y.).—The following description of this was given in "The Gardeners' Year-Book," for 1867:—"A beautiful dwarf stove perennial with the habit of a Gloxinia, the leaves cordate ovate, deep green, and the ventricose flowers rose colour, dotted in the manner of a Tydaea, and deflexed from the top of a stalk supporting them above the leaves. It is a hybrid between Eucodonia Ehrenbergii and Nagelia zebrina splendens."

ACTION OF NAPHTHALINE ON INSECTS.—The son of the late distinguished

Professor Pelouze, M. Eugène Pelouze, has found that naphthaline prevents plants from being attacked by insects. It neither kills the plants nor the insects, but scares the latter away. A very small quantity suffices. —(Scientific Review.) A correspondent (J. Tate), wishes to know how the naphthaline is applied.

AGRICUS FIMENTARIS (Mrs. C.).—It was a Coprinus, although called as above in the letter read at the meeting. A correct drawing of Scilla verna has been published, and a copy will be sent to you gratis if you send your address to our office.

NAMES OF PLANTS (F. C.).—*Crataegus crus-galli*. (H. N. L.).—The plant you enclosed is not *Viola cornuta*. Of *V. auricula* we never heard. We cannot determine the name of a plant from the leaves alone. (M. H. A.).—*Euonymus latifolius*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending May 26th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 20	29.918	29.857	74	35	60	55	S.W.	.00	Cloudy; overcast, heavy clouds; clear starlight.
Thurs. 21	29.924	29.751	70	45	58	55	S.W.	.00	Clear and fine; very fine; overcast at night.
Fri. ... 22	29.779	29.672	65	49	58	54	S.W.	.08	Cloudy; densely overcast; very dark, showery.
Sat. ... 23	29.625	29.452	62	38	58	55	S.W.	.24	Overcast; boisterous with rain; showery.
Sun. ... 24	29.615	29.57	61	46	58	55	S.W.	.18	Cloudy, rain; heavy showers; fine at night.
Mon... 25	29.854	29.706	69	38	57	55	S.W.	.00	Overcast; clear and fine; overcast and cold.
Tues. ... 26	30.001	29.925	70	37	58	56	S.	.00	Clear and fine; very fine; clear at night.
Mean	29.802	29.697	67.29	41.14	58.14	55.00	..	0.50	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

CHICKENS DYING IN THE SHELLS.

In the early days of advertising, before small men and new establishments started by making their merits known in half-a-sheet, or, at least, a column of the *Times*, there was a pertinacious advertiser who addressed all England, of every sex and station, by giving them to understand that sooner or later they must do so, but in the meantime the advertiser asked of every Briton this question—"Do you bruise your oats yet?"

Everybody does not keep poultry, everybody will not, but many people do. We are beset with letters asking why chickens die in the shell instead of emerging from it; why hens do not bring their chickens off punctually. We answer all their questions with another: Do you moisten your eggs yet? If you do not, there is the cure for all your troubles, the solution of all your difficulties.

Partridges, Pheasants, and Grouse seem to be more successful at hatching than our domestic fowls that have all known "means and appliances" to boot. The truth is, their eggs are thoroughly wetted twice every day. At morning and evening the hens leave their eggs to feed: they go in among the damp grass covered with dew, and come back wetted through, especially on the breast that is immediately in contact with the eggs. The hen does not even shake herself before she sits on them. Every egg is well soaked, and the moisture penetrating to the membrane lining the inside of the shell keeps it soft; whereas, especially in this dry and hot weather, if the hen is merely taken off her eggs for half an hour, and they are not moistened, the membrane becomes as dark and tough as india-rubber. The chickens cannot get out. For a full week before hatching time when the hen leaves her eggs, dip your hand in water, withdraw it while streaming, and wring it over the eggs.

A popular writer says, "We are all more or less remiss in turning our respective mangles;" and this hatching season, as usual, many who have neglected a few simple rules are unsuccessful, make a trouble and disappointment of what is really very easy and amusing, and blame anything but their own mismanagement.

I always avoid heavy Dorkings and Cochins as sitters, so have no losses through their awkwardness, and make my hens as tame and manageable as possible.

This has been an excellent season, especially with eggs from a distance—as an instance, thirteen Golden-spangled Hamburgs from Mr. W. A. Hyde, Hurst, near Ashton-under-Lyne, distance two hundred miles, produced eleven uncommonly strong chickens. The hen sat on a turf, with very little straw, was attended to daily, and after the second week, the weather being very dry, had her breast wetted, and actually went on the eggs dripping. This facilitates the escape of the chickens from

the shell, and adds materially to their strength; so does a constant change of food. Spratt's Prairie beef meal is excellent in this way. Should any have indigestion and fever, a pill composed of camphor and aloes, from a quarter to half a grain of each ingredient, according to the size of the patient, is very effective, and may be repeated with safety night and morning until the excessive thirst is removed.—HENRICUS.

THIS SEASON'S HATCHING—TREATMENT OF HEN.

In reply to M. G. Hastilow and "VERITAS" I add a few notes on the above subjects, first giving my own hatching experience.

When hatched.	No. set.	No. hatched.	When hatched.	No. set.	No. hatched.
Feb.	7	0	April 16	19	9
Feb.	9	0	April 25*	12	6
Feb.	9	0	April 25+	12	2
March 1	10	7	May 2	10	8
March 21*	10	3	May 9*	10	6
March 26	10	4	May 11*	13	11
April 13	10	6			

All the eggs were Brahmas. Those marked (+) were sent me, and the nest marked (*) was bought, which may account for the unusually bad result! The first three sittings each contained from four to six birds dead at about a week old, proving that the eggs were chilled, the others being clear; and the subsequent hatches till the warm weather set in also contained several eggs added at different dates.

I can assure Mr. Hastilow that my friend who lost ten broods of Cochins is too veteran an exhibitor and old a hand to make the mistake he supposes, of setting too many eggs, of which he quite correctly states the inevitable result, unless we do as the "successful old dame" "Y. B. A. Z." alludes to, but whom I agree with him in not copying, who sets her eggs in hot weather, when they will almost hatch themselves, and, of course, need little care. At such seasons we poor amateurs ourselves have little to complain of, and often like her hatch every egg. And, by the way, my last brood of eleven would have been thirteen had I taken a little more care, for there were healthy live chicks in the other two eggs; but when half hatched they got tucked into empty shells and stifled—not uncommon in a large brood, and always fatal if not discovered and remedied in time.

With regard to failure in early hatches, I cannot do better than quote a paragraph from a Scotch friend and brother fancier, who every now and then writes me a long letter, which I never read without pleasure, and very seldom without profit. The other day, commenting on the success of a nest from me which hatched very well compared with two sittings of his own set the same day, which almost totally failed, though all the eggs were good, he said, "I am sure this was how it happened. The two hens did not dust themselves well, and when finally lifted off the nests were as full of vermin as they could possibly be. Now a hen in such a case keeps pecking at herself all day

and night at intervals, and some of the eggs get chilled. Again, I often go at night to see the sitting hens, and with a young hen it is quite common to find one or more eggs out from under her, even if she has only seven or eight eggs. As they all come outside in turn, this must do much to spoil the whole brood."

The last remark I can corroborate from my own experience. If the hen be not too heavy the fault can be guarded against by making rather a deep hollow in the nest, which keeps the eggs together; but a large hen often breaks eggs in a nest so made.

And now in reply to the kindly request of "VERITAS," that I would give my own views upon his courteous communication, I must frankly admit "that 'Nemo' does not attend to his sitting hens so well as he might." It is, alas, too true; but when I inform him that my hobby has to be ridden within the precincts of a small town garden, and that my business avocations require my presence every morning by 6 A.M., he will understand that this arises "from circumstances over which I have no control." That I am not ignorant of the plan he recommends may, perhaps, be proved by the fact that in a work on poultry, which most readers of "our Journal" know to be written by me, I have given, from "Poules et Oufs" (a sort of compendium of "Le Poultry"), not only a description of the process, but the very engravings (by permission) with which it is illustrated; still I do not think the French system adapted to this country for several reasons. In the first place, in our climate the hens would become infested with vermin if only allowed to dust themselves now and then, and the eggs get chilled, as my friend describes, unless, as the French do, an apartment is set apart for the process, and kept warm. Further, except in cold weather, I incline to the opinion that half an hour's absence is better for the eggs than a very short period. I may be singular in this notion; but when the weather gets warm I have never found that a very close sitter brought such good broods as one which remained off a fair time (possibly my Scotch friend again!) In the early days of incubators the eggs were kept heated without any intermission; but although this seems to answer perfectly in Egypt, I believe that here a periodic cooling is found important to success. But, lastly and chiefly, I altogether differ from "VERITAS" in his opinion, that chickens thus hatched are stronger than those produced on the ground. It is necessary, to have any success at all, that the eggs be damped, and by adopting this precaution chicks may be hatched on a shelf with no difficulty; but my experience is, that apart from all question of moisture, there is something in the ground itself (by ground I mean real earth), which gives a vigour to the broods nothing else can impart. "VERITAS" confesses to having lost many. It will be seen I have had a tolerable number, and scarcely any have died, whilst those few are nearly all accidents, or from one brood, whose mother from the first stood up all day instead of brooding them as she should do.

Another objection is, that very many hens are not quiet enough to be put back in their nests by hand. Cochins and some Dorkings will do so, but with many you would find your bird all "alive and kicking," to the damage of the egg shells. On the whole, therefore, while I believe that for very early broods, with quiet hens, some such plan as "VERITAS" describes may be adopted with advantage where possible, I far prefer the natural method of giving the hen a small run and leaving her to herself in ordinary seasons. The run should be small, and she should be alone in it; with these conditions and a proper nest I believe that the average result will surpass that of any other treatment, if the number of chicks actually reared to maturity are, as they should be, taken into the account.

With regard to packing, the last eggs I hatched and which, so far as they themselves were concerned, it will be seen were, without exception, fertile and vigorous, came to me from Lancashire and were thus packed. Each egg was wrapped in paper and then enveloped in a wisp of hay. Thus guarded they were bedded rather loosely but steadily in a small flat-topped hamper, a layer of hay about 2 inches deep being placed over and under them. Hay was also padded between the eggs and the sides of the basket. This is a first-rate method, if anything superior to bran, as described by me the other day, but I would use either according to the journey, weather, and other circumstances.—NEMO.

P.S.—I cannot exactly give reasons, but I have a very strong impression that, entirely apart from temperature, an east wind has a very prejudicial or at least retarding influence upon

hatching. Can any of your readers either confirm or contradict this from their own experience?

ON POULTRY SHOWS IN GENERAL AND ONE IN PARTICULAR.

ONE of the main objects in securing prosperity to poultry shows, is to inspire the exhibitors with confidence; but not often is that taken into consideration. The question naturally arises, How can it be effected? and my object is to answer that question.

I object to any of the members of the committee showing their own specimens for competition. As a general rule, and where practicable, the committeemen are chosen from those taking an interest in the breeding and rearing of fancy poultry, &c., which is not what I object to, only (except in rare cases) they generally study their own interests before that of the show, and in some cases even make their office a means of furthering the object they have in view. Now, I ask, would it not be wiser, if for that once, the committee, or rather intending exhibitors on the committee, would withhold their specimens from exhibition? Perhaps there may be some who think, that in excluding the committee I have taken too wide a range. Well, then, in illustrating my case, I will only object to secretaries showing for competition. They, at least, ought never to do so (and one having the interest of the show at heart would not), and for these reasons: They know every entry, and can either enter their own specimens or not, according to pleasure, or, what is more probable, their chance of obtaining a prize. In illustration I beg to submit the following:—Suppose a secretary is awarded a medal or other prize, with a pair of birds of far inferior merit to others exhibiting for that same prize, what is the inference many would draw? Again, suppose three prizes are advertised for award to a certain class, the first and second are given, but the third is withheld (not for want of merit, as the specimens are highly commended), and given to a single hen belonging to the secretary, what is the inference drawn? Another case, and I have done. Suppose the judge is a dealer, amongst the exhibitors there may be one or more of his customers—say, for instance, the secretary is. The judge recognises his birds, and awards them prizes. What, I ask, again, would be the inference many would draw?—CAROLINA DUCK.

BREEDING PILE GAME FOWLS.

I QUITE dissent from "NEWMARKET'S" views on the breeding of Piles, and other cross-breeds. He describes the old celebrated Cheshire Piles as white-legged, white skinned birds. I happened to have the acquaintance of the late Mr. Ashley, who was the originator of these birds, and, in fact, bred almost all the Cheshire Piles, and I am very intimately acquainted with his son, the present Mr. R. Ashley, who, I think, breeds as many and as good birds as any man in England, often supplying Mr. Fletcher, Mr. Brierley, and others, who are not, with the exception of Mr. Akroyd, breeders, but buy and show, and do not breed. Well, the late Mr. Ashley bred these Piles from white-legged Black Reds and White Game. They were but very few in number, and as they were not found so good as desired, although fair birds, they were crossed with willow-legged Black Reds, thereby giving the yellow leg and yellow skin. This breed is considered the original Cheshire Pile.

"NEWMARKET" says that the white-legged white-skinned birds are good, if well bred. This only puts them in the same position as any well-bred bird, and if not well bred it is not a good bird. I would ask, Where are now the Cheshire Pile, and the Lemon Pile of Lord Derby? neither, I believe, to be compared with the present Blood Piles for beauty or courage, for show or pit purposes. These remarks are gathered from upwards of fifty years' experience in breeding Piles.

I also take exception to "NEWMARKET'S" remarks on Greys being bred from Brown Reds. Greys bred from or crossed with Brown Reds have nothing to recommend them but their fighting qualities, being the ugliest Game birds I know. They are mottle-breasted, "toad-bellied," both defects entirely destroying their chance of prizes. But while entirely dissenting from "NEWMARKET" in the above particulars, I think his general description of Game fowls is correct, as, for instance, that Brown Reds should have the gipsy face, the hens having a brown-marbled, or laced body; but where are the judges that would give prizes to hens not having "rook bodies?"

Black Reds should have clean red faces, but if we are to "improve on Nature," and give our Brown Reds the clean red face, shall we not also give them the shape, and looseness and softness of feather of the Black Red, instead of the beautiful symmetry, closeness and hardness of feather, so essential to the Brown Red? If we cross breeds like Black Reds and Brown Reds, how are we to get one peculiarity without another?

I should have liked to have had my say on tails, but am afraid I am occupying too much space.—CHANTICLEER, *Nantwich*.

LIGHT VERSUS DARK BRAHMA POOTRAS.

IF any of our noted breeders of Dark Brahmas intend accepting my challenge they must do so before June be out, as I consider they have had quite time enough to think about it, if they intend to meet me. "Nemo" was quite right in questioning my additional conditions; and in reply, I beg to state I do not wish any concessions from the "Standard of Excellence," simply the additions thereto as mentioned in my challenge. My reasons for such shall be given at some future time.—F. CROOK, *Vine Cottage, Forest Hill*.

CANKER AND ROUP IN PIGEONS.

HAVING read the whole of the correspondence upon these subjects in your Journal, I felt inclined to send you a brief outline of my experience in the matter during the last two months, hoping that it may bring forward some one who can throw more light upon the matter, for we appear still to be in the dark both as to cause and remedy.

The roup first made its appearance in my loft in the beginning of March. It showed itself about the same time in two young Carriers and one young Dragon, all in separate nests. The old birds at that time were healthy; the young birds died, but not before two of the old ones had taken it. From that time to the present it has continued spreading. I have tried Mr. Heath's and Mr. Rose's remedies; the effect was beneficial in some cases, in others the birds died under the treatment. After losing several of my best birds I tried Baily's roup pills; the effect so far has been good, but as the time is short I cannot speak positively upon it. Certainly I have not lost one bird since, although I had some bad cases that I tried them upon.

After carefully watching the effect of the disease for several weeks I am surprised that any experienced fancier should say roup is not contagious. The cases brought forward do not prove it to my satisfaction. I have several cases in which one bird is very much affected with the disease, but the mate is in perfect health; but I have more cases the reverse of that. I will give you one instance. I have a Short-faced Kite hen that took the roup in March. She was mated to an Almond cock; he caught it of the hen and died. I then put to her another cock bird that was in perfect health, and he caught the disease and died. She has partially recovered. I could state several other cases which to me demonstrate that roup is highly contagious. Who would say that the small pox is not contagious? and yet how frequently it attacks only one individual in a large family!

The canker I care but little about; if taken in time I find it easily cured, although I have generally found that when one young one in the nest is attacked, the other takes it unless the remedy is applied promptly.

Being an amateur I read with interest the articles on matching for colour, &c., and have been waiting to see some of the promises fulfilled in the shape of other letters upon similar points. There is a great want felt by amateurs which I am sure could be well supplied by your able correspondents. We read often enough what we should not do, but we want to know what we should do. We have heard what is a bad match for Black Pouters, but no one has said what is the best. A few practical letters like Mr. Simpson's would do much to improve the various strains of birds. I hope we shall see them, but above all I would like to see every letter written in a good spirit. I think if we differ in opinion we should still display the spirit of friendship.—J. WREN, *Lowestoft*.

P.S.—I have found that all the young ones died that were affected by the roup. No remedy that I could try would save them, and the disease generally assumed a different form in the old birds which died from what it did in those which recovered.

STAVELEY POULTRY SHOW.—The Committee of the Staveley Poultry Show have just issued the prize schedule of their first

Exhibition. We hope it will prove a success. Six silver cups are comprised in the schedule, besides a considerable amount of money prizes. The Committee on their prize sheets state the names of the two gentlemen engaged as Judges.

A GUIDE TO CANARY-BREEDING.—No. 6.

AS I stated at the commencement of these brief articles, I have not attempted a learned disquisition on Canaries. I have tried to make them what they profess to be, and what I wish the Editors of the Journal had entitled them, "Au A B C Guide," with due emphasis on the A B C. I am somewhat sorry that I have provoked no discussion, but I infer from this that the matter I have adduced has been so very elementary as, perhaps, to leave but little room for any. When I have inserted my paper-knife week after week into the uncut folios of the Journal, always commencing at the "Poultry, Bee, and Household Chronicle," as I have no doubt those genial souls the "WILTSHIRE RECTOR" and "D., *Deal*," do at the other end, I have often admired the plucky manner in which "NEW-MARKET" and his opponents buckle on their spurs and fight on behalf of their combative *protégés*. Pigeons, too, can evoke columns of spirited discussion; while the "DEVONSHIRE BEE-KEEPER" and other apirians have a friendly bout now and then, enriching our stock of knowledge from their own well-stored hives. "D., *Deal*," who is equally at home among roses, camellias, and potatoes, will relate his experience, and tell us the names of a score of approved sorts of either, with a detailed statistical account of their merits or faults. Each and every pursuit which may be supposed to find a home in the country gentleman's house has its niche in your Journal, and friends who maintain all shades of opinion. But excepting a solitary query now and then, one hears but little *pro* or *con*. respecting a fancy which numbers its supporters by the thousand. I thought that the proposition which emanated from Polefield Hall, and which was supported by Mr. Warren, of Southampton, and myself, would have met with a ready response; and that your columns would, week after week, have teemed with articles from enthusiastic correspondents, till the subject was thoroughly ventilated, and something like an all-England association formed, with its complete schedule and standard of excellence. Granted that breeders are too fully occupied with their birds just now to pay much attention to these matters, but I hope that before the autumn shows commence some definite conclusion will be arrived at touching certain points which the liberal extension of prize schedules is beginning to develope. The value of a perfect cap in a Lizard; what constitutes the difference between marking and variegation in Norwich and other classes; whether Ticked and Variegated Belgians should be shown in the same class; the proper classification of Crested Norwich, &c., are questions of interest which I should like to see discussed.

In drawing these articles to a close, I will just add a word or two on running one cock with two or more hens, which it is sometimes advisable to do. The *modus operandi* is either to keep him in a separate cage, and introduce him to the hens when they evince a disposition to nest, and then leave the rest to the good breeding and feeding qualities of the hens, or to single out one, the best, as his mate, and confine him with her till she lays her first egg, when he can be introduced to a second. By the time she has built and laid, the first will have chipped, when he can be returned to his first love to assist in family duties. I have seen two hens in one cage each attending to her own nest, and each receiving attentions from the cock without showing any symptoms of jealousy, and it is not uncommon in such a case to find either hen assisting the other in feeding. Polygamy is tolerated among Canaries as among other domesticated feathered tribes, and the cock will be found faithful to all his loves, even after a very prolonged absence.

I may at a future date, as occasion may suggest, request the favour of a corner in these columns in advocating the claims of the Canary. Few hobbies pay their working expenses better, and Mr. Bedwell's observation, which I quoted some time ago, showing that the sale lists of our exhibitions prove it to be as remunerative as "breeding pelargoniums or bees" is very true. No one can spend an hour in a breeding-room without learning lessons of kindness, gentleness, and affection. I spend many an hour there with my children—no greater treat to one than to dispatch him with my basket to the fields for the daily supply of green food, and no greater pleasure to

another than to allow her to tidy the room, while a third is too young to do much else than purloin my egg, build houses with the sand, upset the water, and other amusements. Still, who can resist the gentle tap at the door, and "Papa, may Jacky come in and help?"—W. A. BLAKSTON, *Secretary, North of England Ornithological Association.*

HINTS ON CANARY-BREEDING.

I AM very successful in breeding Canaries, but I like them to look pretty as well as comfortable. I take away the two ugly boxes meant for nests, and also the wires, as I like only a pair of birds in each cage. I next arrange little branches of pretty evergreens in the place of the boxes (avoiding Box, for its smell is very unpleasant), and then a handful of hay. Afterwards I hang up the nest bags sold for birds, and add fresh moss and white feathers. I like to see the birds building.

I always open the cage door, and give the hen the option of bathing whilst she is sitting by placing a glass dish on the top of the cage. I take the opportunity of cleaning the cage whilst she is out. They always are ready to go in again when everything is ready for them; and if the plan of the evergreens is once tried I am sure the two square boxes would never be used again.—AN OLD HEN.

FECUNDITY OF THE QUEEN BEE.

I SEE in the report of the May meeting of the Entomological Society, which appeared in page 361 of "our Journal," that Mr. Desborough stated that "a single queen had produced at many as 108,000 eggs, which would be about 20,000 a-year." There can be little doubt that Mr. Desborough has arrived at this ridiculously low estimate of the breeding powers of the queen bee by observing one in a unicomb hive, where her fecundity has been thwarted and rendered of no avail by the very limited number of breeding cells which she has had at her disposal. Dzierzon gives four years as the average duration of life in the queen bee, and considers that during that period an especially prolific queen may lay more than 1,000,000 eggs. No one who is acquainted with the internal economy of a strongstock will consider this an over-estimate. It is nothing unusual to see from 15,000 to 20,000 cells occupied by brood during certainly three months of the year, and when we add to this period the spring and autumn months, during which breeding takes place, first in an increasing ratio until it reaches the culminating point which I have indicated above, and afterwards decreasing, until in October or November it entirely ceases, and consider that during this protracted period the tenants of the brood cells are renewed every three weeks, we may form some idea of the enormous fecundity of the queen bee.—A DEVONSHIRE BEE-KEEPER.

NEW BOOK.

Profitable Bee-keeping on Improved Principles, Chiefly Designed for the Use of Cottagers. By the Rev. P. V. M. FILLEUL, M.A. London: Christian Knowledge Society.

This is a reprint of a series of papers on profitable bee-keeping from the pen of the Rev. P. V. M. Filleul, better known to the readers of this Journal first as the "COUNTRY CURATE," and more recently as "B. & W.," which appeared last year in the "People's Magazine."

The highest praise which we can award to this little brochure is to say that it is eminently practical and worthy of its accomplished author, in whose words we may state that "if the reader will only be careful to follow its instructions, he will find bee-keeping far more sure, not more troublesome, and much more profitable than he has yet found it." We extract the following description of the wooden hive recommended by Mr. Filleul:—"One of the best hives that can be made is a common good-sized bucket without a handle, and with the bottom knocked out. It will last almost for ever, which cannot be said of any sort of straw hive. In this respect it will be found much cheaper in the end. Turn it up on a bench or stool with its broadest end uppermost, and cover it with a flat round board, and you have a most excellent bee hive. Any cooper would make these without a bottom cheaper than a bucket. The board at the top must have a 2-inch hole in the middle of it, and must lie so close upon the hive that the bees

shall find no crack or crevice by which to creep in or out. At the same time it is better not to fasten this top to the hive, as the bees very soon fasten it down for themselves. It is well, however, to place a flat stone or thick slate upon it, with a brick or two to prevent it from curling or warping, and the whole should be covered over with an earthenware pan to shoot off the rain. The hole in the top board can be stopped up with a bung, or covered over with a piece of slate. A hive of this shape can easily be made of straw, but in this case it is better to work the round of straw both at top and bottom on a hoop of stout wood, such as coopers use. These hoops will preserve the straw much longer, and make the hive sit well on its stand, and the wooden board on its top.

"The use of this hive is great, for, in the first place, it is very convenient for putting a cap on in the honey season; but its advantage will chiefly appear in the end of summer at the time of the honey harvest. One of the greatest objections to the common hive is the impossibility of taking away the honey without destroying a quantity of comb, which would be of value to the bees another year—much more valuable than the wax to be got from them would be to the bee-master. Not only so; there is often an immense quantity of brood (or young unhatched bees), destroyed, which if preserved would add greatly to the prosperity of the hive another year, as these young bees will live till spring. Now, this hive with a flat and moveable top will remedy both these evils; for, after getting rid of the old bees, you may remove the top board by passing a knife with a thin blade completely under it all round, so as to separate the combs from it. Then the comb which contains the honey can be easily cut out without injuring the lower part of the combs at all, especially if there are sticks in the middle of the hive to support them."

WIDTH OF ENTRANCE TO SUPERS.

I AM putting supers on my Woodbury hives. Can you inform me the best way to prevent the queen entering? I had a large quantity of honey spoiled last year from this cause. I have this year tried wires three-sixteenths of an inch apart, which appear to answer very well, with the exception of one, in which I used brass wires, I think a little closer. The bees entered the super, but in the course of two days I found about two thousand dead, apparently all young bees. Should you think the entrance too narrow for them to return, or were they poisoned by the brass?—S. THORNE.

[We think the brass wires must have been rather too close together, as we do not believe the bees to have been poisoned by them. We should be glad if others would afford us the benefit of their experience upon the point with regard to which information is sought by our correspondent, as we are not ourselves qualified by experience to offer an opinion upon it.]

SILKWORMS.—We are informed by Mr. L. Harman, of Catton, near Norwich, that he has 200,000 silkworms, consisting of mulberry breeds, producing yellow, white, and green silk, and our readers may embrace the opportunity of making experiments in silkworm-rearing if they apply to him during the next fortnight.

SILKWORM-REARING IN ENGLAND.—No. 10.

AN ounce of silkworms' eggs, numbering between forty and fifty thousand, having been hatched, it is necessary to follow a good system of management in order to rear the worms. I shall premise all the worms to have come forth from the eggs on the same day, although in reality they may have done so on four consecutive days, and that they occupy four sheets of paper or calico, if the latter be used, of the dimensions already named. By judicious management the majority of the worms may be brought to spin together, or within a couple of days of each other—viz., by placing the first hatched on the lower stages, and the last on the higher ones. The higher the position the warmer, and the worms so placed will eat more voraciously than those lower down, and, consequently, will grow faster. However, their arriving at maturity on three or four consecutive days is of no particular consequence, but where many are kept it is advantageous, for the work of attending to them is better divided.

To rear the worms, from 1500 to 2000 lbs. weight of mulberry

leaves are required. The precise quantity it is impossible to fix, as it varies much according to quality and other circumstances. I will not say it is always necessary to weigh the leaves, for any person will soon understand by the consumption what quantity to supply. With regard to the surface the worms should occupy, between every two there should always be at least the space of a third. The more they are at liberty to crawl about, the purer is the air around them, and, consequently, the greater is the chance of their growing strong and healthy. This is one of the important points in silkworm-rearing. When worms are placed on a sheet of paper, its surface should never be even half filled with them, so that plenty of room may be allowed for their growth.

The First Period and Sleep.—The first period, up to the first sleep, lasts about six days, during which time the worms are to be fed every five hours. They will consume from 12 to 15 lbs. of clean, fresh, finely-cut leaves, which are to be lightly dropped over them. On the first day a few ounces will be enough, on the second 2 or 3 lbs. will be required, and the quantity must be gradually increased on the third and fourth days, the worms requiring more food, but their demands diminish sensibly on the fifth and sixth days, because their dormant state is at hand.

On the morning of the fifth day it is desirable to shift the young worms to clean sheets of paper, forming two parts of one, by dividing the insects. Many persons leave this operation until after the sleep, but I consider this early cleanliness goes far in establishing the future health of the silkworms. They will occupy, by the time the first sleep comes on, about 20 feet of space.

The operation of removing them to the fresh sheets of paper is executed by giving the worms their first meal of whole leaves, or leaves merely torn up the middle. The leaves are to be laid over them, stalk upwards, and by these they are lifted away as soon as filled by the worms, and put where required. The worms remaining, because they did not go on the leaves, must be again covered with leaves, and afterwards any left can be lifted away by some portion of the old leaves.

This first sleep lasts about two days, after which the worms cast their skins, and are soon again in want of food. During the sleep keep the temperature at 70°, whatever slight fall may at other times have occurred. Do not, now the worms are small, attempt to touch them, for they are easily crushed; indeed, great care is requisite even when large, otherwise they seem to suffer. In feeding, distribute the cut leaves equally to the worms, so that all may have the chance of eating without loss of time, otherwise their sleeps cannot come on together, which will make it necessary to continue feeding those which are later.

The Second Period and Sleep.—The second period like the first lasts about six days, during which time the worms will eat about 40 lbs. of cut leaves. On the first and second days they will require 10 lbs. or 12 lbs.; on the third and fourth, about 20 lbs.; on the fourth and fifth, 10 lbs. By the time this sleep comes on they will occupy 35 or 40 feet of space, or nearly one entire stage, if allowed plenty of room. No papers should be allowed to become too full of worms without dividing these, which operation will generally be found necessary the day after the first sleep, and again on the fifth day before the second sleep. On each of such divisions the insects are transferred to fresh papers as before described, and the refuse, dirt, &c., removed.

The meals should be repeated every five hours. It is customary on the Continent to give the last meal plentifully at 11 p.m., and the first in the morning as soon as sufficiently light for one to see, which would be about 4 or half-past 4 a.m. As the worms go into their sleep give frequent light meals to those which are backward, to push them along. Inequality among them arises from neglecting this, and not keeping them in a space proportioned to their growth. It often happens, even with every care, that some of the first to sleep, awake and shoot their skins before others on the same paper begin to sleep. In this case light meals must be continued frequently until all take their sleep. Then immediately remove the forward worms upon whole leaves, or leaves attached to the young shoots, to other papers, leaving the sleeping ones until they again become active, and can be transferred to another paper by themselves. There is a method much adopted to maintain equality, by observing when all are asleep, and then starving the most forward on waking, even for twenty hours, to await the later ones. I condemn this as unnatural, for al-

though they do not die in consequence of going without food even for several days, they must suffer. I do not, however, think any ill effect follows confining this starving to intervals of eight hours from meal to meal.—L. HARMAN, JUN.

OUR LETTER BOX.

WHITE DORKINGS (White Dorking).—It is said that the original Dorking was a white fowl. There is no proof of it. A Mr. Evelyn is said to have introduced them into Surrey. They are excellent birds, second only to the Grey of the same breed. Their colour has hindered their being more numerous kept. They are beautiful in a clean atmosphere, but they show smoke; they will not do in towns. An average bird of the breed will cost 25s. They may have double or single combs, but a pen must not be composed of both, and it is advisable to have all the birds in a yard either with double or single combs. The rules for them are the same as for the Grey. They must be well made, have five claws, white legs, and square bodies, and be of large size. We have seen them almost as large as the Grey. Combs are no test of purity.

DEATH AMONG GREY DORKINGS (F. S.).—We are at a loss even to guess the cause of the death of your Dorkings. They have all the advantages of locality, and your feeding seems judicious. Give them camphor and wormwood in their water. If they have it not, provide them and the hen with plenty of dust for the necessary dust bath. If the hen is not confined, confine her; do not let her drag the chickens about, as hens often do in rain and dew till they perish. Are they fed at daybreak? If not that will account for the death of some of them. They must have food as soon as they are able to see it. Failing that they perish.

WEAK FEET IN CHICKENS (A Constant Reader).—What do you call the stump of the leg? Do they walk or rest on their knees? If they do, they are suffering from general debility, and can only be restored by generous diet, such as chopped cooked meat, boiled egg, ground oats, wormwood, and bread and ale. If they walk on the ball of the foot that may generally be traced to bad flooring of the poultry house, such as stone, wood, or brick. If you have such remove it.

FEEDING RABBITS (A. T.).—Tame Rabbits require a few oats, plenty of bran, green food, and water. They also require to be kept clean. You must judge the quantity necessary by watching what they eat, not what they waste.

CAPONISING (Idem).—Making capons is not anywhere considered a simple operation. We hold it to be wanton and useless cruelty. The young fowls in this country that are only just arrived at the age when the operation becomes possible, are larger and better than the French capon that is ten months old. Instead of resorting to cruelty to enable you to eat poultry all the year, you will find it a great economy of food and saving of trouble if you will arrange your hatching so that you will have tender birds of proper age for table every month. The London poulterers are without rivals in Europe for the quality of their poultry; and while "the consumptive capon on the table" is still found on the continent, we in England have fowls larger and heavier, much younger, and more tender, that have consumed only half the food, and that are not the survivors of scores.

GAPES (C. X. H.).—If you make the bird inhale the vapour of spirits of turpentine, let the bird remain in the box five minutes each time. Give it also a pill of camphor the size of a pea daily.

BOILED EGGS FOR SITTING (J. L. L.).—We said from "the neighbourhood of Halifax," not, as you say, "at Halifax." We cannot refer to the subject further. You can have a stamped copy of our Journal if you order it.

SUBTERRANEOUS POULTRY SHOWS (C. A. J.).—We know of no better guide to them than our weekly-published list. Sea Anemones will not permanently thrive in a marine aquarium, and least of all in one which never has the water changed.

TEN CANARIES EATING THEIR EGGS (R. N. A.).—"I have never had a hen which persistently followed this bad habit. If it be done before she has laid her full complement, furnish her with a drop-nest, which is simply an ordinary nest with a hole in the bottom through which the egg falls into a chamber below, taking care, of course, that a suitable bed of cotton, wool, or other soft material be ready to receive it. If it be a confirmed habit, indulged in at any time during incubation, blow an egg and fill it with Cayenne pepper. This not being so palatable will, except with very depraved appetites, effect a cure. I know a hen, however, which, after having been cured last season by this treatment, has returned to her former propensity, and two eggs duly prepared have disappeared without any good results in the desired direction. I think I would try a rotten egg, as savoury as possible. Failing cure, give her eggs to a nurse; if she is not valuable, twist her neck."—W. A. BLAKSTON."

POISONING BLACK BEETLES (An Old Subscriber).—The article you referred to appeared in No. 353. The address is—Mr. Chase, chemist, 14, Holborn Bars, London.

LIMES AND ORANGE PEEL (Nullus).—We have no information relative to the subjects you name.

POULTRY MARKET.—MAY 27.

There is a slight improvement in trade, and the supply of goslings, ducklings, and chickens has somewhat increased. We hope there will soon be a steady demand at moderate but remunerative prices.

	s	d.	s	d		s	d.	s	d
Large Fowls.....	5	0	to	6	Pheasants	0	0	to	0
Smaller do.....	4	0	to	4	Partridges.....	0	0	to	0
Chickens.....	2	6	to	3	Guinea Fowls.....	0	0	to	0
Goslings.....	6	0	to	6	Hares.....	0	0	to	0
Ducklings.....	3	0	to	3	Rabbits.....	1	5	to	1
Pigeons.....	0	9	to	0	Wild do.....	0	9	to	0

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 4-10, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
4	TH	Meeting of Linnean and Chemical Socis.	63.5	44.5	57.9	15	49	at 3	7	at 8	9	at 7	41	at 3	13	1 55	156
5	F	Royal Hort. Society's Great Show closes.	70.8	47.3	59.0	23	49	3	8	8	9	8	15	4	1	45	157
6	S	Royal Horticultural Society, Promenade.	69.7	47.6	58.6	21	49	3	8	8	5	9	58	4	1	34	158
7	SUN	TRINITY SUNDAY.	69.2	46.8	58.0	25	47	3	9	8	51	9	46	5	16	1 23	159
8	M	Meeting of Royal Geographical Society.	70.6	46.6	58.6	15	47	3	10	8	32	10	38	6	17	1 12	160
9	TU		70.6	47.5	59.1	20	46	3	11	8	6	11	34	7	18	1 1	161
10	W	Meeting of Royal Agricultural and Microscopical Societies.	71.6	47.1	59.3	19	46	3	12	8	37	11	34	8	19	0 49	162

From observations taken near London during the last forty-one years, the average day temperature of the week is 70.3°; and its night temperature 46.8°. The greatest heat was 90°, on the 6th and 7th, 1846; and the lowest cold 33°, on the 5th, 1856. The greatest fall of rain was 1.48 inch.

THE CLOUDBERRY.



AMONG those of our native fruits which have not yet been brought under and improved by cultivation, this is undoubtedly one of the most interesting. Its popular name of Cloudberry, suggestive as it is of mist-enveloped mountain tops, is yet hardly descriptive of the situations in which it is most usually to be found, as these are generally at altitudes considerably lower than cloudland, on upland moors, or round the bases of our

Highland bens. Sometimes it occurs in scattered plants nestling here and there among the Heather, but more frequently in patches of from a few square yards to an acre in extent. It is, however, far from being a common plant in this country, to which circumstance may, perhaps, be attributed much of the interest it excites, as, throughout the Highlands, it is very unequally distributed, while in the southern counties I am not aware that it is to be found at all.

My first acquaintance with it, otherwise than from dried specimens, and equally dry descriptions in botanical works, took place in Banffshire some years ago. It was during one of those rare intervals when with some misgivings we busy plodders tear ourselves away from, and try to forget for the time being, all those thousand-and-one little cares and schemes, which, were they not more than counter-balanced by the love of gardening for its own sake, would soon make our path through life a worse than Abyssinian highway, to enjoy for once a holiday, if a week of unlimited rambling through out-of-the-way places may be so called. Overlooking the extensive grounds and gardens of Cullen House, one of the seats of the Earl of Seafield, stands the Bin of Cullen, a high conical hill, from the top of which a splendid view can be had of the Moray Firth and the north-eastern seaboard, as far north as the Ness of Wick, and the jagged peaks of Caithness. Having been informed that round the sides of this hill the Cloudberry was to be found in great abundance, we set out from the gardens, and after traversing a mile of deer forest, began the ascent. It is no Mont Blanc, certainly, being only 1000 feet or so in height, yet, to some of us at least, there was as much freshness and novelty in the feat as though we had all been members of the Alpine Club, and were just about "to do" that great Swiss celebrity in the most approved style. As we ascended, the Scotch Pines became mere pigmies, and at last assumed an almost prostrate form, cowering down and leaning over to the inland side from the effects of the sea blasts. Failing to find the object of our search we made for the summit, where we spent an hour of uninterrupted pleasure in surveying the wondrously wild yet beautiful scenery which lay around and below us. Here we were almost within sight of the "ultima Thule" of the British Islands. Away to the south some two hundred miles lay a spot of ground crammed as full with objects demanding attention as Pandora's box was with ills to mankind, yet thoughts of these had no power to reach us here, but in their place

was time to gaze our fill at an expanse of land and sea which made one feel little to look at.

Descending by the opposite side, and picking up by the way some specimens of alpine plants strange to us, we at last came upon the little Rubus—no solitary patch of it, but a track covering one side of a slight ravine for 50 or 60 yards. This was towards the end of August, and the fruit was mostly gone, evidently eaten by grouse or other moor fowls; but it was apparent that the crop had been most plentiful, and sufficient was left for us to find that the berries have a peculiarly rich, vinous, and slightly acidulous taste. The plant itself is herbaceous, and seldom attains a height of more than 9 or 10 inches. The leaves, large in proportion, are simple, lobed, and serrated round the edges. The flower is whitish, and the fruit of a rich orange red and composed of a variable number of drupes, fewer and more irregularly clustered together than in the Raspberry or Bramble. In the Gaelic language it is called *Cori-bata-moon*, the signification of which I am unable to give. It is highly prized by the Highlanders, and large quantities are gathered during the season both for home use, being made into preserves, and for sending south. To the sportsman and his gillies, when enjoying their toilsome pastime under a broiling sun, it is also a welcome sight, and I have more than once been questioned by gentlemen, who were first made aware of its unique flavour during the shooting season, as to the possibility of bringing it under cultivation. So far as I am aware, however, no attempt has ever been made to do so, at least, none on a scale and with that degree of systematic persistency necessary to secure success; yet it seems highly probable that if it were crossed with some other herbaceous species of grosser habit (and there are several such), a variety more easily cultivated might be obtained. As it is, when transported from its native soil and air, it only lives; it will not grow, unless it be to grow "small by degrees and beautifully less;" for within the last few years I have several times met with it in gardens, but was always told it would not fruit.

The Cloudberry is said to attain a much larger size and finer flavour in Lapland and the northern parts of Norway and Sweden, but in notices of it given by travellers in these regions it seems to be not infrequently confounded with *Rubus arcticus*, which is a species of nearly similar habit, but with purplish fruit, and of even more agreeable taste. This again is given in most works on botany as a native of Scotland, and the Island of Mull is invariably quoted as one of its stations. There it is no longer to be found, nor is it, according to some of our best botanists, to be met with anywhere else in Scotland; so that either some abnormal form of *R. chama-morus* must have been mistaken for it, or it must have become extinct.—*ANGLICAN GARDENER.*

THE CULTURE AND PROPAGATION OF THE PELARGONIUM.

A few remarks on this subject founded upon experience may be useful to a numerous class of our readers; for

who amongst them does not grow Pelargoniums, which are to be found in the cottages of the most humble and in the gardens of the most wealthy? Those who are fond of plants possessing finely-marked foliage can have ample choice in the Golden Zonal and Tricolor-leaved sections; and then for beauty of foliage and richness of colouring in the flower, the stage Pelargonium is not easily surpassed; to this must be added easy cultivation. I do not wish to occupy space with any lengthened details, but only to offer a few hints on the propagation and after-management.

When I resided in Scotland I always preferred to propagate Pelargoniums in May, as they made much finer plants before winter; in the neighbourhood of London July and August are as suitable, but any time between the first and the last-named months will do. I am well aware at the same time that they may be propagated in any month in the year. For this purpose I prepare a number of clean 60-sized pots, by carefully crocking them, and placing a little moss over the crocks. I then fill them with a compost of fine loam and leaf mould, with the addition of a little silver sand, pressing it in so as to be moderately firm, place a thin layer of silver sand over the surface, and with a small dibber insert one cutting in the centre of each pot. In pressing the soil round the cutting care must be taken not to injure the part which is under ground. The best position for the cuttings is a shelf near the glass, and they ought to be placed there at once, and receive a good watering through a fine rose. They require no shading, except it be for a day or two if the sun's rays are particularly scorching. I propagate all the finer Zonal and Tricolor-leaved varieties in this way, as they have then a great advantage over plants rooted in boxes, or a number of cuttings placed together in larger pots; for separating the plants afterwards always gives them a serious check.

As soon as the small pots are full of roots the plants ought to be shifted into pots one size larger, and in growing Pelargoniums of whatever variety care must be taken not to overpot. Under proper management the plants will be as fine, and the flowers will be more perfect in small pots than they will be in larger ones. I continue to shift the plants as they require it until they receive their last shift, and I rarely plant a Pelargonium of any variety in a pot of a greater inside diameter than 8 inches.

The compost I use when I plant them in the pots in which they are intended to flower consists of pure turfy loam and one-eighth part of manure, composed of equal parts of cow dung and horse droppings, with enough silver sand to keep it open, and I add a little leaf mould when I can obtain it, but this last, I think, is immaterial.

The plants in every stage of their growth ought to be kept near the glass, and should on no account be crowded together; it is better in every way to have three good plants than six in the same space, if they have not enough of room to allow the foliage to expand properly.

Watering is most important, and especially so in the winter; at that time they require looking over about once a-week, and those that are quite dry may be watered. Of course, as the season advances, and the pots become full of roots, more water will be required. As soon as the trusses of flowers begin to appear, give liquid manure twice a-week, and the quantity used may be increased or the application withheld according to the strength of the plants. Too much manure water is a fertile cause of spot, as it affects the young and tender tips of the roots so that they cannot perform their functions. At this stage of growth none of the plants must be allowed to become very dry. When in flower they ought to be looked over twice a-day. There is one thing I ought not to omit to state, and that is to have the plants thoroughly cleansed from green fly before the blooms expand, as the tobacco smoke causes all the expanded flowers to drop off.

The best form of glass structure for growing Pelargoniums is a subject on which I would like to see some discussion in your columns, as well as which is the best form of glass structure for growing other sorts of plants. I believe that a half-span roof facing the south is the best for growing the stage Pelargoniums, and a span-roofed house with its end to the south the best for all the Zonal and variegated-leaved varieties. Of course they can be moved to any position in the greenhouse or conservatory when they are intended to keep that way.

I offer these few remarks at the present time, as I know they will be useful to numerous growers of this class of plants

who are also readers of your Journal, and to whom a few plain hints are valuable.—J. DOUGLAS.

STONES AND THEIR UTILITY IN A SOIL.

ABERCROMBIE and other old garden writers gave directions for the various soils used in potting to be very carefully sifted through a fine sieve, removing everything that was lumpy, whether of stone or earthy matter. This doctrine held good in many instances up to the period when gardening periodical publications made their appearance; but at last some innovator boldly attacked the practice, and a less finely-sifted potting material became the order of the day; even turfy bits of half-decomposed vegetable matter were allowed to take their place in the mixture, and soon, as if innovation could not be carried too far, these turfy pieces of material were thought to be better if taken direct from the place where grown and used the same day. This extreme, however, is but seldom adopted; nevertheless, fresh turfy soil, of which the grass may have been in a growing state from three to six months before, is thought to be the nearest approach to perfection that can be made in a potting soil, or one adapted for a fruit or conservatory border, assuming it not to be too stiff, and its qualities for a good pasture to have been established before. Now, I am not sure but we have often run into error on this score, and it is an attack on this practice in certain cases that the present article is intended to make, for there are often instances in which the carrying-out of the recommendation to use only decayed turf has not been satisfactory.

If we take a survey of the natural products of the earth in the shape of fine specimen trees, good agricultural crops, or other things on a large scale, we shall see that in very many cases one of the ingredients of the soil in which they are growing is very often left out in our composts—I mean stones. Perhaps the reader will be inclined to say, "And very properly left out, too," but I am not sure of that; on the contrary, the reverse of successful cultivation is the case when they are too extensively removed from some places, and this has been proved in many cases in the time of our grandfathers, or perhaps before, and they gained their experience no doubt in the first instance in that way which imparts conviction most truly—namely, by paying for it; bad crops following the gathering of stones from their land, and succeeding generations have found this practice wrong, as it is prohibited to some extent in many places. Now, if stones form such a necessary ingredient in the composition of a soil required to grow a crop of corn, a hedge, or a tree, why are they not equally so in the growth of plants of other kinds? We cannot say that stones are unnecessary, and that the soil is as well without them, for the fact of farming crops being diminished by the too-extensive gathering of the stones proves their presence in the soil to be necessary. This being admitted, why do we deny them a place in our potting-bench mixtures? Of late years it is true they have been admitted, and extensively, too, into our Vine borders, but cannot they be allowed for plants in pots that are large enough? It may, perhaps, be urged that the limited quantity of soil enclosed in a pot will not afford room for stones; but when we see the manner in which most of the plants grown in pots cling to the drainage, we are led to inquire why they would not relish more or less of stones as well as the broken pots. The latter is a less-natural product, and it is questionable whether it is better than stones or not. I imagine the utility of both consists in their retaining a certain quantity of moisture, which they part with when it is wanted to the roots that embrace them, and in this respect stone would seem as suitable a substance as the crocks, or perhaps more so, provided the stone used is in accordance with the soil it is mixed with, which is not always the case when artificial soils are formed, as will be shown hereafter.

I have been led into the foregoing notice of the utility of stones in the soil from the occurrence of a case in which they were wanting. Some alterations were being carried out on an elevated tract of thin stony land that was in pasture; a large quantity of turf was taken off to the usual thickness; it was cut to lay down again, and most people envied the gardener who had the good fortune to obtain so valuable an addition to his compost yard. The ground was very stony, but it would appear that the stones had been carefully picked off the top when it was laid down in grass, so that the sward could be pared off without many stones being in it, while below that the stones could not form less than three-fourths of the whole.

This turf was carted home and used as wanted; but, strange to say, it exhibited a tendency to run together into a more compact body than other turfy soil from ground of quite a stiff character, so that a much greater proportion of sand was necessary to keep it open, and the kind of sand to be had not being suitable to the composition of the soil, the result was not so satisfactory as was expected. Perhaps it may be asked, How did the grass grow on it? This is easily answered: the roots of the grass had access to the stony medium below, and the issue led me to infer that turf obtained from such a source was not a fair sample of the soil, and used alone its deficiency became apparent.

In confirmation of the opinion given above, I may mention a case which occurred here some years ago. Some beds of Rhododendrons were made on a soil apparently the very reverse of that in which the plant flourishes, it being a pale yellow-coloured soil mixed with three-fourths of its bulk of stones, varying in size from 3 lbs. or 4 lbs. weight to small ones, but not what are either called gravel or sand, as the stones were mostly angular. The ground being broken up some plants were put in without any additional material, and some had a portion of the turf taken off the same ground chopped up and put around their roots, and the plants planted in the latter manner did not do so well as those which had less attention paid them. The ground, I may remark, was so thickly covered with stones after the work was completed, that scarcely an inch of it was visible. Here was an instance in which stones were evidently of service in the case of one of our most fibrous-rooted plants, so densely fibrous, indeed, that it is not an easy matter to free the roots of the earthy material they are growing in; and yet these roots seemed to find their way around and between the stones that formed so important a proportion of the soil, and I was led to the belief that the very stone itself furnished its due share of the food the plants thrive upon; for although the latter did not succeed so well as they might have done in a proper peaty soil, they did much better than others in a good rich garden soil and in a situation apparently much more in accordance with their habits.—J. ROBSON.

IN-DOOR CLIMBERS.

PERGULARIA ODORATISSIMA.

PERGULARIA ODORATISSIMA was first introduced into this country as long since as the year 1784; but it is so seldom met with, that I hope the following account of its merits may be the means of placing it in a more favourable position than it now occupies.

Many beautiful old-fashioned stove climbers have doubtless been thrown out of cultivation from the change that has latterly taken place in the heating of garden structures. A few years ago tan was the material in general use for supplying bottom heat to Pine Apples, and large pots plunged in the corners of pineries for the most part contained such plants as that under notice. In such a position the roots had the chance of passing through the bottom of the pot and running amongst the tan, while the pot was a sufficient check to induce the plant to produce a greater profusion of bloom than it otherwise might have done. I do not know that we have gained much by our change in heating such places, except, perhaps, a little saving of labour and increased neatness. In most Pine stoves bottom heat is now supplied by hot water; and where that mode of heating is adopted there is hardly plunging material sufficient to cover the pots, and the dry heat underneath prevents the roots from spreading in that direction.

In the Pine stove here nothing but tan is employed for bottom heat, and a plant of the Pergularia is plunged in one corner. On renewing the tan a few weeks ago I found the roots running amongst the tan at 5 feet from the surface, as if they fully enjoyed their situation; and I maintain that climbers add great interest to such places, particularly as many of them will not grow in cooler houses.

Pergularia odoratissima is an evergreen twiner which grows freely when in good health, but, like some others, it requires time to make a good stem before it commences to flower well. As regards special treatment, when once the plant has covered the space intended for it all the shoots should be cut closely in, similar to the short pruning of Vines. The flower trusses issue from the axils of the leafstalks, and each shoot produces, according to the vigour of the plant, from three to six trusses, each composed of from thirty to forty flowers. These are light green with a yellow throat. None of the plants of this genus

can lay claim to much beauty; but this particular species is, perhaps, the sweetest-scented climbing plant in cultivation, one truss being sufficient to fill a whole house with perfume.

The plant generally commences to bloom in May, and continues more or less in beauty during the summer months. It is easily propagated, and even small plants will grow well in peat and loam.—CHARLES ROBERTS, *Dorfold Hall*.

SKELETONISING LEAVES.

If you wish to make a bouquet, the first thing to do is to select the leaves and seed vessels that you intend to use. If you have never tried your hand at this kind of business, it would be better for you to try such leaves as those of the Oak or Maple, for the reason that the veins in these leaves are stronger than in most others, and come out of the bleaching process more perfect than thinner ones.

When you have selected your leaves and seed vessels, brush off any particles of dirt that may possibly cling to them. It is necessary that this should be done in order to insure their perfect whiteness; for if any dust or dirt adheres to them when put to soak, it will be apt to stain them in their long bath, and the stain thus given will be hard to efface.

Take a wide-mouthed jar—one that will admit of putting in and taking out the leaves without cracking or bruising them. Lay in your leaves evenly—the stems all turned one way, to avoid getting them tangled when you take them out.

When you have your jar as full as you wish, pour over them warmed rain water. There should be enough to completely cover them. Let them stand where they will be kept warm. Change the water once a week, at least; every two or three days would be better. Cover with a plate, or something that will exclude all dust. The water should be pure.

In two or three weeks the fleshy part of the leaves will be reduced to pulp, and can be removed with a soft brush. Be careful to brush away every particle of the pulpy matter. When you have them skeletonised, as this part of the work is called, they are ready to put to bleach.

To prepare material for bleaching, take a quarter of a pound of chloride of lime, and put it in some clean vessel with one and a half pint of cold, soft water. Stir briskly, breaking all the lumps. When the lime has settled—and it will not take long for it to do so—the solution may be poured off and bottled for use.

When ready for bleaching, place your skeletonised leaves in a large-mouthed vessel. It is necessary that the mouth of the dish be large enough to admit your hand, as the delicate lace-like leaves break very easily, and should not be bent if it can be avoided. Place the leaves in the vessel, and add enough water to cover them. A tablespoonful of the bleaching solution may then be added to every pint of water. If seed vessels are to be bleached, keep them by themselves, as they are apt to tear the lace-like network of the leaves, and add more of the bleaching solution, as the thick stems are harder to bleach than any other part of a bouquet, and require more chloride to effect this part of the work satisfactorily.

A day will probably be long enough to whiten them completely. Take out one carefully, and you can tell by that when they are sufficiently bleached. When you think they will do, remove them carefully, and lay them in a large dish filled with clear soft water. Wash them carefully, and pour off the water; after which, rinse thoroughly through two or three waters slightly warmed. They must be rinsed free from all the chloride of lime, or they will be apt to change to a dingy yellow.

When you have them washed, place them between sheets of blotting paper to dry. A very short time will suffice for them to dry in. Do not allow them too get too dry and crisp for handling without breaking, before you form them into bouquets. When you can bleach Oak, Maple, Beech, and such leaves well, you can try more delicate ones; and if you are careful in your work, you will succeed in preparing some fine specimens.—E. G. REXFORD.

DESTROYING WIREWORMS.

LET "INFELIX" (see page 395), try a heavy dressing of lime to get rid of the wireworm. I took my present place in October, 1866. Every thing and every place was infested with it. It was no use to attempt to grow Celery—in fact, it was as bad as it could be. I asked questions right and left, but no one could give me a cure. I thought I would try lime. I put, I should think, as nearly as possible three tons per acre. Last year I

had splendid Celery, and my gardener says there is scarcely such a thing as a wireworm to be found in the place. I was also overrun with snails; since putting in the lime I have not 1 per cent. of the number I had before. I may mention that the gardener had been eleven years in the place, and had never known any lime used.—DRAYTON GREEN.

NEW BOOK.

Gleanings from French Gardens. By W. ROBINSON, F.L.S.
London: Frederick Warne & Co.

THIS volume is a *rechauffé* of what the author has written in a series of articles in various journals during the past twelve-month, and which he considers of sufficient importance to be embodied in a collected form for the permanent benefit of British horticulturists. With very few exceptions there is nothing contained in Mr. Robinson's book which has not been treated upon over and over again in the pages of this and other garden journals; so that these "Gleanings" are nothing more than the author's view of certain features of French horticulture, which subjects have all been discussed before; and such operations as are described in the work as being most worthy of adoption, and are suited to our climate, have already been introduced into our garden practice. All that the author has written on Fruit-tree Pruning, Gladiolus Culture, Rose Showing, the Parks and Gardens of Paris, and other minor subjects, have all been made familiar to the public before by other writers, and however interesting they may have been as fugitive pieces in periodical publications, they are not of that importance to require the permanent form in which they now appear. Among his certain features most worthy of adoption, let us take for instance "Mushroom Culture," at page 243, and we ask any ordinary English gardener wherein the French process described by Mr. Robinson differs essentially from that practised in this country:—

"They begin with the preparation of the manure of course, and collect that of the horse for a month or six weeks before they make the beds; this they prepare in some firm spot of the market garden, and take from it all rubbish, particles of wood, and miscellaneous matters; for, say they, the spawn is not fond of these bodies. After sorting it thus, they place it in beds 2 feet thick, or a little more, pressing it with the fork. When this is done the mass or bed is well stamped, then thoroughly watered, and finally again pressed down by stamping. It is then left in that state for eight or ten days, by which time it has begun to ferment. After these eight or ten days the bed ought to be turned well over and re-made on the same place, care being taken to place the manure that was near the sides of the first-made bed towards the centre in the turning and re-making; then they leave the mass for another ten days or so, at the end of which time the manure is about in proper condition for making the beds that are to bear the Mushrooms. If they do not find the stuff 'sweet,' unctuous, and of a bluish-white colour in the interior, they do not expect much success; but by carrying out the foregoing simple directions there is little chance of having it otherwise. Then they make the little ridge-shaped beds—about 20 inches wide, and the same in height—formed like 'the back of an ass,' and placed in parallel lines, at a distance of 20 inches one from the other. The manure is made into close little beds gradually and carefully, the man pressing it down well with the fork, so as to give the whole mass a firm close-fitting texture, so to speak, and gradually narrowing as he builds till his little ridges are finished. Of course the length of those ridges will be determined by the wants of the grower; in a market garden they may extend over and cover a considerable extent. The beds once made, the manure soon begins to warm again, but does not become unwholesomely hot for the spread of the blanc or spawn. When the beds have been made some days the cultivator spawns them, having of course ascertained beforehand that the heat is genial and suitable. Generally the spawn is inserted, the holes being made in one line around the bed, within a few inches of the base, and at about 13 inches apart in the line. Some cultivators insert two lines, the second about 7 inches above the first. In doing so, it would of course be well to make the holes for the spawn in an alternate manner. The spawn is inserted in bits about the size of three fingers, and then the manure is closed-in over and pressed firmly around it. This done, the beds are covered with about 6 inches of clean litter. Ten or twelve days afterwards they visit the beds to see if the spawn has taken well. When they see the white filaments spreading in the bed they know that the spawn has taken, and that it is good. If they do not see that it has begun to spread, they do not leave the bed alone, as too many do amongst ourselves, but take the spawn they suppose to be bad and replace it with better. But, using good spawn and being practised hands at the work, they rarely fail in this particular; and when the spawn is seen spreading well through the bed, then, and not before, they cover the beds with fresh sweet soil to the depth of about an inch or so."

It is evident, from the perusal of this book, and as our

readers will judge from the above extract, that Mr. Robinson is not himself sufficiently instructed to enable him to instruct others, else he would not have offered this as a feature of French gardening worthy of our adoption. Like most young travellers who visit strange countries for the first time, everything he saw in France with which he himself was not familiar was noted down as new, and the self-confident tone with which he assailed the criticism of practical men of greater experience who commented on the subjects upon which he wrote gave for a time an importance to them which they would never otherwise have possessed, and which has now entirely subsided.

There is one chapter for which we must give Mr. Robinson credit, and that is the first, on "Subtropical Gardening," which has more freshness about it than all the rest of the book besides.

There are one or two errors which Mr. Robinson should correct in the next edition. In every case he calls M. Jamin, of Bourg-la-Reine, "Jamain," M. Jamin being of an entirely different family, though also a nurseryman; and he calls M. Rose Charneux, M. Charmeaux. These are, of course, trivial mistakes, but they are apt to suggest that the other contents of the book have been got together with a similar want of regard to perfect accuracy.

ROYAL BOTANIC SOCIETY'S SHOW.

MAY 27TH AND 28TH.

THE grand features of the Exhibition were the Roses exhibited by Mr. William Paul, and Mr. Turner's magnificent Azaleas which were the admiration of every one, and when viewed from the opposite side of the Exhibition they looked most imposing and extremely beautiful. The only fault I could detect was the want of a few more green leaves to relieve the glowing masses of colour produced by this splendid group of plants. I hear they have passed into the hands of a private grower, Mr. Turner having sold them.

The next grand feature of the Exhibition was the magnificent Pelargoniums exhibited by Mr. Fraser, of the Lea Bridge Road. They were certainly the best-grown lot of plants ever exhibited, the only fault noticeable in the collection of Fancy kinds was the want of one or two lighter shades of colour. Most of the varieties were of dark shades. In the class for nine large-flowered varieties the colours were more evenly balanced. In both of the above classes no difficulty could have presented itself to the Judges in awarding the first prize, for the plants were as much superior to all other collections as Mr. Turner's Azaleas were to all other exhibitions in that class.

The Orchids were also good and numerous, likewise the stove and greenhouse plants. Cape Heaths were also exhibited by Mr. Peed and Messrs. Jackson & Sons. It is a pity that this fine class of plants should have ceased to create the interest they did in former years. When Mr. Smith, of Norwood, produced his finely-grown plants they were deservedly considered the gems of every exhibition they were shown in. It is to be hoped Heaths will again regain their proper position at our exhibitions.

Mr. James, gardener to W. Watson, Esq., Isleworth, staged the most marvellous collection of Calceolarias I have seen. They were perfect masses of bloom, averaging about 2 feet 6 inches or 3 feet through, and the most perfectly-grown plants I ever saw exhibited. Their names were—Master Parrell, Picturatum, Prince of Wales, Gratitude, and Conqueror.

The eight greenhouse Azaleas staged by Mr. C. Penny, gardener to H. H. Gibbs, Esq., Regent's Park, were well worthy the highest award. They were well grown and exhibited in good condition. In several of the plants the fresh green foliage was pleasingly interspersed with the flowers, a circumstance which gave them a much fresher and more agreeable appearance, and a finish not to be seen in any other collection in the Exhibition. This style of exhibiting them should be more encouraged, and would do away with the monotonous appearance presented by such immense masses of colour, without the natural proportion of green with which Nature when left to herself accompanies her floral productions.

Fine collections of Ferns were exhibited by Mr. B. S. Williams, of Holloway, and others. These gave a fine character to any exhibition, and wonderfully relieve the eye.

Amongst the novelties exhibited was a pretty white bedding Pelargonium named White Stella. It appeared to have all the good qualities which Beaton's famous Stella possesses, but instead of producing a crimson flower it is pure white. I think this will become a valuable bedding plant. It was exhibited by Mr. Aldred, of 22, Bridge Street, Maida Vale, together with several very promising Tricolor-leaved and other Pelargoniums. Mr. Mann, of Brentwood, again exhibited a splendid box of Zonal Pelargonium Lord Derby. This is, without doubt, the finest Scarlet Pelargonium ever raised, and if it retain its fine character when bedded out, will indeed be a most valuable acquisition to the flower garden. I strongly recommend all our readers interested in this class of plants to at once procure Lord Derby.

Near Mr. Mann's beautiful box of Lord Derby was a pretty col-

location of hardy, herbaceous, and alpine plants exhibited by Mr. Ware, of Hale Farm Nurseries, Tottenham. Amongst these I noted the following as likely to prove useful for bedding purposes—*Diplotaxis tenuifolia variegata*, having a pretty, white, variegated *Chrysanthemum*-like leaf, deeply jagged, a bed of this edged with blue *Lobelia* or scarlet *Verbena* would have a fine effect, or a bed planted alternately with this and the beautiful new *Colons Marshallii* would produce one of the grandest effects ever seen in any bedding arrangement. Another pretty variegated plant in this collection, and likely to prove useful on account of its neat habit, is *Agropodium podagraria variegata*. Messrs. E. G. Henderson exhibited some pretty plants suitable for bedding purposes. Foremost amongst these is *Centaurea ragusina compacta*, certainly the finest of all the frosted-silver plants for bedding purposes. This if used as an edging to a bed of *Colons Marshallii* would produce a fine effect. I can conceive nothing more beautiful than a large bed planted as follows, the bed to be surrounded with grass:—Supposing the bed to be 12 feet across, I would plant the centre with *Colons Marshallii*. This should occupy 5 feet. Next to it I would plant a ring 2 feet 6 inches wide of *Centaurea ragusina compacta*; next to this a ring of *Lobelia speciosa*, 2 feet 6 inches wide, finishing with a 2-feet edging of the pretty golden *Pyrethrum Golden Feather*, or Little Golden *Christine Pelargonium*—either would do—next the grass. The latter would, however, have the finer effect as it produces immense numbers of pretty pink flowers borne well above its neat yellow foliage. These would harmonise beautifully with the bright blue *Lobelia*, the green grass surrounding, and the neat yellow foliage. Or, in lieu of this, the beautiful golden *Colons Telfordi aurea* might be used with good effect. This will undoubtedly prove one of the finest yellow-foliaged bedding plants in cultivation. Visitors to Battersea Park during the summer will have an opportunity of judging for themselves of the effect produced by the two beautiful *Colons*—*Telfordi aurea* and *Marshallii*. I feel sure a bed planted according to the arrangement I have suggested above would have an extremely fine effect.

The mention of the two *Colons* above reminds me that most of the varieties lately sold by the Royal Horticultural Society were exhibited on this occasion. Mr. W. Bull also exhibited his collection of varieties raised by himself. From the kinds exhibited a good selection may be made, and this is the order in which they stand in my estimation. For cultivating in pots for conservatory decoration—1, *Colons Marshallii*; 2, *C. Bausei*; 3, *C. Berkeleyi*; 4, *C. Telfordi aurea*; 5, *Gem*; 6, *Elegant*. For bedding purposes—1, *C. Marshallii*; 2, *C. Telfordi aurea*, and 3, *C. Berkeleyi*. It is generally admitted that *C. Marshallii* is the best of the whole series for all purposes. If I make a wrong assertion in thus placing *Marshallii* I am open to correction, and willing to cancel the opinion I have formed of its merits. Having made this selection of the varieties exhibited up to the present time, I think all the others may be easily dispensed with. The above six have all received first-class certificates, and several of them have been awarded this distinction by three societies.

A very handsome plant was exhibited in Mr. Bull's collection under the name of *Coprosma Baueriana variegata*. I have great hope of this making a first-class bedding plant; it has beautiful glossy green leaves, which are edged with a deep band of creamy white, they are of great substance, and the plant has an erect or stately style of growth; I have booked this as first-rate. It would have a fine effect if planted with the dark-foliaged *Colons*. Mr. Bull also exhibited some pretty *Petunias*, suitable for bedding purposes.

Mr. W. Paul exhibited several good bedding plants, amongst these a Gold and Silver Tricolor-leaved *Pelargonium*, named *Prince Silverwings*, with a *Stella* habit and style of growth. This is a very pretty and useful plant. His *Cottington*, *Scarlet*, or *Double Tom Thumb*, I think will prove most useful for bedding purposes. It is a most profuse-flowering variety, and the flowers appear to remain on the plant a long time in perfection; they are semi-double. A basketful of a very pretty neat bedding hybrid *Pelargonium*, in the way of *Shrubland Pet*, also came from Mr. W. Paul; this was named *Little Gem*.

In the collection of Messrs. J. Veitch & Sons there were gems in the way of stove plants, including some of the *Colons* named above, the curious and beautiful *Begonia boliviensis*, some new *Alocasias*, and curious double-flowered *Gloxinias*. Messrs. Carter & Co. exhibited some fine Tricolor-leaved *Pelargoniums*. Their *Prince of Wales* promises to be a very great acquisition, also Mrs. Dunnott. The same firm likewise exhibited some fine *Echeverias*; one named *metallica*, is remarkably fine, having large thick leaves of a metallic colour. This will also prove a very handsome plant for bedding purposes. *Echeveria sanguinea*, also exhibited by the Messrs. Carter, is a fine bedding plant.

Messrs. Dolson & Son, of Isleworth, exhibited a fine lot of their splendid *Pelargonium Magnet*. This I think will prove a splendid market plant. Every plant was as even as if it had been turned out of a mould. Space will not permit me to refer to the curious hybrid Ivy-leaved *Pelargoniums* exhibited by Mr. Wimsitt; these must form the subject of another paper.—J. WILLS, F.R.H.S.

NORWICH HORTICULTURAL AND FLORAL FÊTE.—This, which will be held at Norwich from the 19th to the 22nd of August, during the visit there of the British Association for the Ad-

vancement of Science, will be on a very liberal scale. As an example, for twelve stove and greenhouse plants the first prize is £10; the second, £7 10s.; and the third, £5.

ROYAL HORTICULTURAL SOCIETY'S SUMMER SHOW.—JUNE 2ND TO 5TH.

The glories of Chiswick were revived on Tuesday last in the magnificent Show of the Royal Horticultural Society at South Kensington, which, for the splendour of the plants, the unusually propitious weather, and the brilliancy of the company, has not been surpassed. Rival exhibitions have for many years bid high for popular favour, and for a time shared the honours of horticulture with the old Society; but the tide is again on the turn, and the prestige which by precedence and prescription belong to the Society, but which was lost for a time, has again returned, and horticulturists find in its regenerate state all the attractions of a first love. Notwithstanding the diversion of the great Show at Manchester, to which many of the plants of our great metropolitan exhibitors were attracted, there was such a profusion in the conservatory and covered arcades of South Kensington, that space could hardly be found to accommodate them, a refuge for some having been found in the open arcades. What struck thoughtful observers on Tuesday was the sad want the Society has to contend with in not having a suitable place wherein to hold the exhibitions. Grand as the Show of Tuesday was, its finest features and the capabilities of the material of which it was composed to form a splendid effect, were entirely lost through being confined to those dark one-sided arcades. The conservatory was all that could be desired, and all was done that could be done with it under present arrangements; but if that Exhibition had been held in a place suitable for the purpose, it would have made a display such as has not been seen since the great International Show of 1866. Contrast the rigid formality of this with Messrs. Waterer & Godfrey's glorious exhibition of *Rhododendrons* in the great tent, and it will be seen on what side the advantage lies. The Council has, with Mr. Gibson's assistance, made a most successful alteration in the arrangement of the ground in this tent, and if they could be persuaded to erect somewhere in the garden a permanent structure adapted to the present improved style of plant exhibitions, not only would they secure the support of all the leading exhibitors, to whom dark arcades and similar inconvenient places are peculiarly discouraging, but they would find that all the circumstances attending the exhibitions would tend to make them far more attractive and profitable. There is a dead dullness about the lower end of the garden, where all sorts of ineffective attempts at "bedding" have been carried on, which might be much more usefully employed were some such structure erected there, and if connected with the eastern and western arcades, would form a dry and well-sheltered promenade all round the garden. Without depreciating the efforts of other societies and public bodies who have established rival exhibitions, it is not to be forgotten that though the power of numbers has not always of late years been with the Society, it has continued to preserve so much of its influence and prestige as have enabled it through great difficulties to maintain the first position, and always to be regarded as the nucleus round which all purely horticultural matters instinctively centre. All that is now wanting is a proper place in which the Society can exhibit the power of its influence.

THIS, the best display which the Society has yet held at Kensington commenced on Tuesday last, and will continue till Friday evening. Its extent will be judged from the facts that prizes were offered in the schedule in nearly seventy classes, that nearly all of these were

taken, and that not without in most cases severe competition. The subjects thus brought together extend from the north-east entrance to the eastern arcade, and through the conservatory, where they are closely packed on a double row of staging, to a point far down in the western arcade, and for their great variety and general excellence they are such as are rarely equalled. Besides the other attractions of the Show, there is in Captain Fowke's immense tent, the grand exhibition of Rhododendrons by Messrs. Water & Godfrey which is certainly the finest display of the kind that has ever been seen in this country. Altogether the great Summer Flower Show is the greatest success of the season in a horticultural point of view, and we think it will also be a success, judging from the vast assemblage of visitors on the first and second days.

In Class I, for nine Azaleas, Mrs. Glendinning & Sons are first with magnificent plants of Madame Mueliez with large white flowers beautifully flaked and dotted with purple, Eulalie, Variegata, Lateritia, Prince Albert Victor, Gledstanesii, Petuniflora, Purpurea magnifica, and Gem, the last two, though fine in colour, being smaller plants. Mr. Carson, gardener to W. R. G. Farmer, Esq., Nonsuch Park, Cheam, is second with large splendid specimens, very even in size and training, of Sir C. Napier, salmon, Triumphans, the yellow Sinensis, Holfordii, very showy rose crimson, Broughtonii, densely covered with flowers, Murayana, Exquisite, Formosa, and Apollo, the last a dazzling mass of scarlet flowers. Mr. Turner is third with Etoile de Gand, Iveryana, still one of the most effective of the white kinds, Glory of Sunninghill, Gledstanesii, small plants of Cheloni, Mars, and Leopold I, with two others. In the nurserymen's class, however, Mr. Turner takes the first prize with six magnificent plants standing 7 or 8 feet high, consisting of Sir C. Napier, Optima, Gledstanesii, Madame Mueliez, Variegata, and Brilliant, the scarlet flowers of which are beautifully interspersed with a few of the leaves. Mr. Williams comes second. In the corresponding class for amateurs Mr. Penny, gardener to H. H. Gibbs, Esq., Regent's Park, takes the first position with splendid examples of Brilliant, Cheloni, Iveryana, Gem, and Sir C. Napier. Mr. Carson, who is second, has a fine plant of Juliana, about 4 feet high, and Model is also fine; and Mr. Wilkie, Oak Lodge, Kensington, is third. Of plants in pots not exceeding 12 inches in diameter, two fine collections are furnished, the one by Messrs. Ivery, the other by Mr. Turner, and which respectively receive first and second prizes. Messrs. Ivery's plants are neatly grown, finely bloomed pyramids, standing from 3 to 4 feet high. Duchesse de Nassau is especially fine; the others are Gem, President, Cheloni, Extranei, Criterion, Charles Enke, Duc d'Arenberg, Variegata superba. Mr. Turner sends Duc de Brabant, Flower of the Day, Flag of Truce, Elegantissima, and some of those already named, the whole being in fine condition, and several of them wonderful specimens for such small pots.

Of Roses in pots Mr. William Paul is the only exhibitor, and takes first prizes in all the classes in which he exhibits—namely, for nine plants in 13-inch pots, for twelve in 10-inch pots, and for six new kinds sent out in 1865 and 1866. Juno, Coupe d'Hébe, and Lelia in the first-named class are remarkably fine. His six new kinds consist of Black Prince, Fisher Holmes, Mademoiselle Marie Raby, Rose Perfection, Camille Bernardin, and Prince de Portia; but though well-bloomed plants, when we saw them they had suffered, notwithstanding the awning, from the sun and heated atmosphere of the conservatory, which was densely crowded on the afternoon of the opening day of the Show. Mr. W. Paul's group of twelve also consists of nicely bloomed plants. Of cut blooms twelve fine boxbills are shown by Messrs. Paul and Son and ten by Mr. Turner, who receive extra prizes; and Messrs. Lee, of Hammersmith, send some charming blooms of new kinds.

Pelargoniums of all kinds are exhibited in overpowering numbers, and of a perfection which is but rarely approached. The nine plants from Mr. Fraser, of Lea Bridge Road, are especially remarkable for their size and profusion of bloom, particularly Lilacina and Sanspareil. The others, but little inferior to them, are Excelsior, Desdemona, Ariel, Caractacus, Leander, Lord Clyde, and Conqueror. Mr. Turner is second with Pericles, Lord Clyde, Fairest of the Fair, Mary Hoyle, Desdemona, Exhibitor, Fair Rosamond, Congress, and John Hoyle, all of which are also large and fine plants, though not equal to Mr. Fraser's. Mrs. Dobson & Sons, of Isleworth, are third. For six kinds Mr. Fraser is again first with Lilacina, Candidate, Conflagration, Pericles, Diana, and Fair Rosamond. Among amateurs Mr. Nye, gardener to E. Foster, Esq., Clewer Manor, is first with very fine examples of Empress Eugénie, Conqueror, Miss Burdett Coutts, Desdemona, Lord Chancellor, and Fair Rosamond. Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, who is second, also has plants in very fine bloom.

Of Fancy Pelargoniums, always so beautiful, the finest six in the nurserymen's class come from Mr. Fraser, who exhibits plants about 3 feet across and remarkably fresh, consisting of Ellen Beck, Delicatum, Clara Novello, Roi des Fantaisies, Arabella Goddard, and Lucy. Mr. Turner is second with smaller plants, very compactly grown, and well bloomed. Among these Tormentor, dark crimson fringed with rose and having a light eye, is very attractive. Mrs. Dobson & Sons are third. In the amateurs' class, Mr. Windsor, gardener to J. R. Ravenhill, Esq., is the only exhibitor, and takes a first prize with medium-sized plants of Undine, Mrs. Ford, Delicatum, Madame Sainton Dolby, Roi des Fantaisies, and Multiflorum.

Of Zonal Pelargoniums there are several fine collections which

constitute a very attractive feature of the Exhibition. The best six (Nosegay and Variegated kinds excepted), come from Mr. Catlin, gardener to Mrs. Lermite, Finchley, and consist of large, finely-bloomed specimens of M. Rendatler, Scarlet Globe, Clipper, Madame Vancher, Eugénie Mezard, and Excellent. Mr. Windsor, who is second, sends Virgo Marie, M. Rendatler, Great Eastern, and Louis Roseler. Mr. Weston, gardener to D. Martineau, Esq., is third. In the class for nurserymen, Mr. Fraser is first with splendid plants of Rose Rendatler, Eugénie Mezard, Jules César, Clipper, remarkably fine; Leonidas, orange scarlet; and Louis Venillot.

For the best specimen Pelargonium of any kind, Mr. Fraser takes the first prize with a very large plant of Desdemona; Mr. Nye being second with Pericles, about 3 feet in diameter; and Mr. Turner, third, with a fine plant of Exhibitor.

Fuchsias are always very attractive when well grown, but are not numerous shown, still those staged are generally in very good bloom. Mr. G. Osborn, Finchley, has the best four in the nurserymen's class. These are Vainqueur de Puebla with a double white corolla, very fine; Conspecta, single white corolla; Rose of Castille, and Prince of Orange. Messrs. August & Wright, Haverstock Hill, are second with Roderick Dhu, scarlet sepals and violet blue corolla; Puritani, carmine sepals, white corolla; Catherine Parr, white sepals, salmon rose corolla; and Enoch Arden, very large, scarlet sepals, blue and red corolla. In the amateurs' class, Mr. Weston, gardener to D. Martineau, Esq., is first with well-bloomed pyramidal plants of Comte Cavour and Universal, dark; and of light kinds, Rose of Castille and Annie. Mr. Filce is second; and Mr. Foreman, gardener, Denmark Hill, and Mr. August, Bedington, equal third. The last-named also sends the best specimen plant, and Mr. Osborn the second best.

Of herbaceous Calceolarias, Mr. James as usual sends splendid examples; and of Lilium auratum good pots come from Mr. Bull and Mr. Turner. The latter has also the best twelve early Pinks. Scarlet Gem, Helen, Devise, Ernest, and Rubens, are very good. Mr. August takes the second prize for Pinks; and Mr. Turner, Notting Hill, the third.

Orchids follow next in the order of the classes, and of these Mr. Penny has a very fine collection of twelve. Among them are Cattleya Mossiae, remarkably fine, the beautiful Odontoglossum Alexandræ with three spikes, Cypripedium villosum, Lycaste Skinneri superba, Cypripedium barbatum superlunum, and Dendrobium macrophyllum giganteum, which, however fine, has a most offensive odour. Mr. Peed, who is second, has among others Dendrobium clavatum, a handsome orange kind with a dark spot, Cattleya Mossiae with unusually large flowers, good Acrides, and the showy Epidendrum vitellinum. In the nurserymen's class for ten Mr. Williams is the only exhibitor, and takes the first prize with a collection in which we particularly noticed Acrides Larpenae, odoratum, and Lindleyanum. Saccolabium guttatum Holfordii, fine Cypripediums, Dendrobium nobile, Cattleya Mossiae. For six Orchids Mr. Penny is again first, and has the showy new Thunia Bensoniae, Oncidium sarcodes, one of the handsomest of Orchids, the Foxhrush Acrides, Odontoglossum Pescatorei, and a pale variety of Lycaste Skinneri. Mr. Burnett, gardener to W. Terry, Esq., Fulham, is second, and Mr. Young, Leigh Park, Havant, third. Mr. Bull also takes a first prize for a collection of six; and for the best specimen Orchid Mr. Penny is first with Cattleya Warneri with eight large, bi-hyly coloured flowers; and Mr. May second with Acrides Lindleyanum with two branching spikes.

Stove and Greenhouse plants are shown so numerous that our remarks on these must be brief, especially as among these plants but few fresh subjects of exhibition have been introduced of late years. The best collection of twelve is that from Mr. Peed, gardener to Mrs. Tredwell, Lower Norwood, and it includes a very large bush of Erica Cavendishii; E. ventricosa magnifica, likewise large, and very bright and fresh in colour; two large Eriostemons, Acrophylllum venosum, Azaleas, and Dracophyllum gracile. Mr. May, gardener to T. P. W. Butt, Esq., Arle Court, Cheltenham, is second, and has in his collection Allamanda grandiflora; Erica jasminiflora alba, with charming white flowers; Phænoecoma prolifera Barnesii; Ixora coccinea, with about a score heads of bloom, some of which are remarkably fine; Ixora salicifolia, not well furnished at the base, but producing fine heads of its orange flowers; a very neat well-bloomed plant of Stephanotis floribunda; Azaleas, and the large-flowered showy Franciscea calycina. Mr. Wilkie is third with Azaleas, Ixoras, a Heath, a well-grown bushy Genetyllis fuchsoides, and other plants. In the nurserymen's class Mrs. Glendinning & Sons are first with a nice collection, Mr. Williams second, and Mr. Tanton, Epsom, third. In the amateurs' class for six plants Mr. Peed is first with fine specimens of Clerodendron Balfourii, very showy and effective by its white and crimson flowers; Dracophyllum gracile, 4 feet across; Ixora coccinea, splendid; Franciscea calycina, and Phænoecoma prolifera Barnesii. Mr. Burnett is second with well-grown neat plants of Rhynchospermum jasmoides, Stephanotis floribunda, Aphelaxis macrantha rosea, and Acrophylllum venosum. Mr. Wilkie is third, and an extra prize goes to Mr. May. Mr. Ward, gardener to F. G. Wilkins, Esq., sends a remarkably fine Dracophyllum gracile, Clerodendron Balfourii in fine condition, Genetyllis tulipifera, and other well-grown plants; and Mr. Carr, gardener to P. L. Hinds, Esq., Byfleet, a very fine example of Rhynchospermum jasmoides. The first prize for the best specimen stove and greenhouse plant goes to Mr. Peed for Acrophylllum venosum, 4 feet high and little less in diameter; Mr. Wilkie being second with

Dipladenia amabilis, well grown, but with only six flowers; and Mr. May third with *Ixora coccinea*.

Heaths, though there are many very well-grown plants, are not remarkable. The best six come from Mr. Peed, and among them are *Depressa*, *Candolleana*, *Eximia*, and *Massoni*, all of them very good specimens. Mr. Ward, who is second, has good examples of *Fairrieana*, *candidissima*, *Easoniana*, *Massoni major*, *Depressa*, and *Tricolor elegans*. Messrs. F. & A. Smith are third, and Mr. Williams takes an extra prize.

The only specimen standard *Rhododendron* shown is one from Mr. Wilkie, which, however, is not remarkable; and to complete the section for flowering plants there is a class for twelve *Amaryllids*, in which Mr. Williams is the only prizetaker. One of the varieties he exhibits, named *Graviana*, is a fine scarlet with a white band; and of the others *Ackermannia pulcherrima*, a well-known kind, and *Eldorado*, light, but rather narrow in the petal, are the most showy.

We now come to the plants with ornamental foliage, and nobler specimens than some of these, except at the London International Horticultural Exhibition of 1866, we never remember to have seen. The best collection of nine comes from Mr. Fairbairn, gardener to the Duke of Northumberland, Sion. Notable among these plants are *Anthurium acule*, with leaves 4 feet long and 14 inches across at the widest part; *Alcacia metallica*; *Alcacia zebrina*, with very conspicuously marked leafstalks; and *Alcacia macrorrhiza variegata*, with its broad foliage very extensively splashed with white, sometimes one-half the blade being so occupied. He has besides a very fine *Lantana borbonica* and *Anthurium magnificum*. Mr. Taylor, gardener to J. Yates, Esq., Highgate, who is second, has also fine specimens, among which is *Cycas circinalis*, which has a very graceful appearance when, as here, it is viewed from a lower level, *Sabal Blackburniana*, and *Dion edule*. He has, besides, *Encephalartos cafræ*, *Rhopala corcovadense*, and *Curenlago recurvata*, an *Amaryllidacean* plant with grass-green ribbed leaves. Mr. Williams, who is third, has fine *Crotons*, especially *C. angustifolium*. *Anthurium regale* with leaves 2 feet long by 15 inches broad, *Dracænas*, and other plants already named. Mr. Barley, Albert Nursery, Bayswater, also sends a good collection. For collections of six Mr. Taylor, Mr. May, Mr. Fairbairn, and Mr. Young take prizes in the order in which they are named; and they send some fine specimens of *Alcacias*, *Crotons*, *Pandanads*, *Palms*, *Theophrastas*, *Dracænas*, *Marantas*, the Rush-like *Littæa jancea*, *Anthuriams*, and *Caladiams*.

To *Caladiums*, however, a class is specially assigned, in which are exhibited some remarkably fine specimens of *argyrites*, *bicolor splendens*, *Belleymei*, *Houllettii*, *Cannarii*, *Chantini*, *Wightii*, &c., by Messrs. Smee, Fairbairn, and Wilkie. *Anthuriams* likewise have a class, in which Mr. Williams takes a first prize with *magnificum*, *acule*, and an unnamed kind with dark green leaves.

Of *Yuccas*, fine pairs are shown by Mr. Bull and Mr. Williams, the latter having tall specimens of the variegated *Aloe-leaved* kind, and he also takes first prizes for *Agaves*, a pair of *Dracæna lineata*, standing about 10 feet in height, and for noble examples of *Dicksonia antarctica*, the trunk of one of which cannot be less than 12 feet in height and 18 inches diameter.

Ferns, stove, greenhouse, and hardy, are very numerous shown, so much so that it would be a hopeless task to attempt to particularise more than a few as being fine. Such are *Cibotium princeps* and *Schiede*, *Cyathea Smithii*, *Gleichenias*, *Cyathea delbata*, *Dicksonia antarctica*, *Todea africana*, *Pteris tricolor* and *argyrea*, *Lomaria gibba*, *Marattia elegans*, and *Alsophila contaminans*, spreading 12 feet across. The principal prizetakers are Mr. Williams, Mr. Taylor, Mr. Young, Mr. May, Mr. Wilkie; and for hardy Ferns, Messrs. Ivory and Mr. Salter, who each show beautiful collections.

In the section for plants shown for their foliage, are *Variegated Zonal Pelargoniums*, and of these Mr. Turner and Messrs. F. & A. Smith have equal first prizes for fine collections. The former has *Lady Collum*, Mrs. Turner, *Sophia Damaresque*, *Lady of Shallot*, *Princess of Wales*, and *May Queen*, the last named only having white-edged leaves. Messrs. F. & A. Smith have *Meteor*, *Banshee*, *L'Empereur*, *Miss Burdett Coutts*, exceedingly fine, *Exquisite*, and *Sunray*. Mr. James is third. The new plants are very numerous and interesting, but as many of them have been already described in these pages, even if space permitted it would be of little utility to do more than mention them. Messrs. Veitch take the first prize for the best six in or out of flower, with *Alcacia Jenningsii*, *Begonia boliviensis*, *Croton tricolor*, a green-leaved kind with a yellow band by the sides of the midrib, and coral-coloured stalks, *Dracæna Cheloni* and *regina*, and *Thaunia Bensoniæ*. Mr. Bull is second with *Coprosma Baueriana variegata* referred to in another column, *Maranta virginialis* with silvery bands, *Carex recurvata variegata* broadly striped with cream colour, *Dalechampia Roeziana rosea*, *Encephalartos gracilis*, and *Cibotium regale*. Mr. Williams also sends a collection.

For a new plant shown for the first time in flower, Mr. Bull is first with *Lasiandra macrantha* with fine, large, violet flowers; and Messrs. Veitch second, with a *Rhododendron* with small yellow flowers and narrow leaves. For a new plant not yet in commerce, Mr. Cross, gardener to Lady Ashburnton, is first with *Actinopteris radiata* with very small, semicircular, fan-like leaves; and Mr. Bull second with his *Lasiandra*. For seedling florists' flowers and garden varieties several certificates were awarded, which will be found in the Floral Committee report which is appended.

Miscellaneous plants are so numerous that we cannot particularise much. Mr. W. Paul sends a very interesting collection of *Ivies*, *Aucubas*, *Ligustrum ovalifolium variegatum* with beautiful yellow-variegated foliage; *Ligustrum coriaceum* with dark green leaves of great substance, very unlike those of an ordinary Privet; *Knonymuses*, a beautiful golden-leaved Elm, *Pelargoniums*, &c. Mr. Parsons, gardener to R. Attenborough, Esq., of Acton Green, has some beautiful pans of *Lycopods* and cones of the same 2½ feet in height, grown on peat and wire framework, and which are very fine examples of what can be done in this way. Near these Mr. Earley exhibits a fine *Lycopodium scandens*, about 12 feet high. Messrs. Veitch and Mr. Bull have large collections of new plants, among which are several remarkably fine specimens of these. Mr. Burley has a collection of *Palms*; Messrs. Lee a mixed collection chiefly of new plants; and Messrs. Osborn the *Variegated New Zealand Flax*, the scarlet-flowered *Gesnera Donckelaarii*, *Dasylicion acrotichium*, &c.; Mr. Salter, *Promies*, *Pyrethrums*, succulents, and hardy fine-foliaged plants; Mr. Ware fine collections of herbaceous plants; and Messrs. Carter Coleraces and *Variegated Zonal Pelargoniums*, of which Prince of Wales well maintains its character as a splendid variety. Mr. Wimssett also sends *Coleus Telfordi aurea*, *Marshalli*, &c. In addition, Messrs. Downie, Laird, & Laing, and Mr. Hooper, of Bath, send stands of *Pansies*; and Mr. Turner, *Pinks*. For the awards to these and other subjects we must refer the reader to the official prize list.

FRUIT.

The show of Fruit is not large, but what is shown is very good. Some very good *Pine Apples* are exhibited, the best being a *Queen* from Mr. Williamson, Whitehaven Castle. Mr. Middleton, gardener to Sir W. Watkin Wynne, Wynnistay, is second. Mr. Neale, gardener to K. Cartwright, Esq., Banbury, third. The best dish of *Black Grapes* comes from Mr. Bannerman, Blithfield, who has large beautifully coloured bunches of *Black Hamburgh*. Mr. Sage, gardener to Earl Brownlow, Ashridge, is second with large and fine bunches of the same kind, and jet black. Mr. Aedy, Lee, Kent, is third. Mr. Standish, of Ascot, is first in the class for white *Grapes* with very well-ripened Muscats for this time of year; Mr. Kettlewell, Potter's Bar, being second with *White Frontignan*, and Mr. Osborn, Finchley, third with *Buckland Sweetwater*, small, but well-ripened bunches of which also come from Mr. Bannerman. Of *Peaches*, *Royal George*, very fine, from Mr. Sage, gardener to Earl Brownlow, Ashridge, are first; and the same kind from Mr. Lynn, gardener to Lord Boston, Hedsor, second, Mr. Tegg being third with *Bellegarde*. Of *Nectarines*, the best are *Violette Hative* from Mr. Lynn, which are very large; Mr. Gardener, Ealington Park, is second, and Mr. Cadger, Luton Hoo Park, third, with *Erluge*, very highly coloured. The best dish of *Figs* is *Brown Turkey*, from Mr. Fairbairn, Sion, and Mr. Miles, gardener to Lord Carrington, Wrentham Abbey Gardens, is next. For *Cherries* Mr. Miles is first with *Black Tartarian*, remarkably fine, Mr. Tillery being second, and Mr. Lynn third.

In *Strawberries* Mr. Douglas, gardener to F. Whitburn, Esq., Loxford Hall, Ilford, is first with *British Queen*, very fine, Mr. Young being second, and Mr. Fairbairn, Sion, has a third prize; fine dishes of Dr. Hogg and Sir C. Napier are also shown. The prizes for the best *Green-fleshed Melons* went to Mr. Young for *Bailey's Eclipse*, and Mr. Mackay for *Golden Perfection*; Mr. Whiting and Mr. Cadger taking those for *Scarlet-fleshed* kinds, the latter with *Scarlet Gem*.

Mr. Middleton, and A. Smee, Esq., Wallington, each send a dish of *Apples*, those from the latter being from pot trees; and Mr. Middleton also sends the *Cape Gooseberry*, *Physalis edulis*.

FRUIT COMMITTEE.—On this occasion a special certificate was awarded to Mr. Rivers, of Sawbridgeworth, for a collection of *Cherries*, among which were the following—viz., *Black Hawk*, an American variety, very fine; *Guigne marbré précoce*; *Early Purple Gean*, a large black early variety, which proved the best; *Brandt*; *Noir précoce de Strasse*, a small, black sort; *Empress Eugénie*, a large, pale variety; *Guigne très précoce*; *Rose Hative de Lyon*, large and excellent, rather pale in colour, with firm flesh; *Beile d'Orléans*, pale-coloured, and excellent in flavour; *Werder's Early Black*, and *Bigarreau Jaboulay*. Standish & Co. sent the *Early Ascot Frontignan Grape*, of which the bunch is medium-sized; the berries middle-sized, greenish yellow, oval, with a *Frontignan* flavour resembling that of *Frontignan Ottone*. It appears to be a very good early Grape, but the consideration of its merits was deferred till there should be a full Committee.

FLORAL COMMITTEE.—At this great Exhibition, although comparatively few certificates were granted, the novelties were very attractive. The following first-class certificates were awarded:—Messrs. Ivory, Dorking, received first-class certificates for two new and distinct hardy Ferns, *Athyrium Filix-femina grandiceps pumila*, and a variety of *Lactuca dilatata*. Messrs. Carter had a first-class certificate for *Coleus Dixii*, one of the Society's hybrids. Mr. Bull exhibited his beautiful new plant *Lasiandra macrantha*, which received a first-class certificate. He likewise had similar awards for hybrid *Coleus Gem* and *Coleus Nonsuch*. Mr. Stone, gardener to J. Day, Esq., had a first-class certificate for a very curious and beautiful *Orchid* *Nanodes Medusa*. Mr. C. Turner, Slough, received first-class certificates for each of the following:—*Nosegay Pelargonium Fire King*, large-flowering *Pelargoniums Heroine* and *Royal Bride*, and *Fancy Pelargonium*.

Marmion. Mr. Mann exhibited five specimens of his Zonal Pelargonium Lord Derby, and several other very fine seedlings; but Lord Derby has brought up the standard of merit so high, that the others could not attain it. Mimas is a beautiful flower, and received a first-class certificate last year. Prince of Wales, a rosy salmon; and The Baron, a bright scarlet Nosegay, were also shown. Mr. Cancell sent two seedling Zonal Pelargoniums, also Verbena Beauty of Kent, but not in condition.

SCIENTIFIC COMMITTEE.—Dr. Thomas Thomson, F.R.S., in the chair. A conversation took place on the nomenclature of plants, arising out of the names given to the seedling varieties of *Coleus* arising in the Society's garden at Chiswick, between C. Verschaffeltii, Veitchii, Gibsoni, and Blumei, in which the custom of giving to varieties names which are usually employed in distinguishing species was deprecated. On the question as to whether either or any of the above were really species though found growing in indigenous localities, Mr. Bentham stated, that the only one he knew to be a species was *C. Blumei*, which he himself had founded.

George Pollock, Esq., sent pieces of the wood of Scotch Fir attacked by an insect, of which specimens were not provided, and which is reported to commit such ravages in his plantations at Bagshot, as to destroy a great amount of timber. The further consideration of the subject was adjourned till the next meeting for more detailed information.

Dr. Gilbert gave notice of a subject which he had placed on the agenda paper, and which he truly stated was one of vast importance both to horticulturists and agriculturists, and that is, the effect which certain manures exercise on different plants in various soils. After giving an outline of the elaborate experiments in which Mr. Lawes and he are engaged on this subject, the consideration of it was referred to the Chemical Sub-Committee, with power to associate some eminent physiological botanists with them. Dr. Gilbert stated in the course of his remarks, that whereas on some soils certain manures caused some plants entirely to disappear, by the encouragement of the growth of others of a totally distinct kind; by a change of the manure the original plants may be restored, and those which displaced them in their turn are supplanted. Dr. Gilbert, however, said, that in all the experiments hitherto instituted, no agent had yet been discovered to remedy the defect in land known to farmers as "clover sickness."

GENERAL MEETING.—G. F. Wilson, Esq. F.R.S., in the chair. This meeting was merely formal, the business being confined to the election of eleven new Fellows, and the admission into union with the Society of the Ryde (Isle of Wight) Horticultural Society.

MESSRS. WATERER & GODFREY'S EXHIBITION OF AMERICAN PLANTS.—To this allusion has already been made; but it would not be just to pass over such a splendid exhibition with a mere casual mention, for it deserves all that can be said in its praise—indeed it is the finest exhibition of what are known as American plants that has ever been witnessed. The entire internal arrangement of the tent has been changed, mounds having been thrown up here, little vallies created there, and the formal character which the planting exhibited in former years has given place to a most picturesque appearance, and when viewed from certain points the scene which the huge masses of brilliantly coloured blossom present is lovely; indeed the most lively imagination would fail to form any conception of its beauty.

Among the finest of the newer kinds to be seen here are Mrs. John Clutton, a remarkably fine white; Charles Bagley, cherry red; Sir T. Sebright, purple with a bronze blotch; H. W. Sargent, with very large trusses of crimson flowers; Caracens, with fine trusses of purplish crimson flowers; H. H. Hume, dark crimson; Stella, pale rose; and Parity, a fine white, with lemon-coloured spots.

LARGE BROCCOLI.

I EXHIBITED two heads last week that must have weighed at least 7 lbs. each, and on May 16th I cut two dozen and a half that averaged 7 lbs. each, many being over 9 lbs., and some few 10 lbs. each, when closely trimmed. I certainly never saw such a lot anywhere else, perfectly white, firm, compact, and circular. The only objection raised was, that the pots were not large enough to cook them.—C. C. E.

MR. JOHN WATERER'S AMERICAN SHOW.—This is held in the Royal Botanic Society's Gardens, Regent's Park, and as usual presents a charming spectacle. The undulations of the ground in the tent, to which we have frequently referred in previous reports, greatly tend to enhance the beauty of the display, which is always one of great merit, and on a very extensive scale, as may be judged from Mr. Waterer's statement that between 2000 and 3000 plants, many of them of the largest size, are employed to produce it.

Among the varieties which are the most recent we noted the following—viz., Mrs. John Penn, rosy crimson, beautifully spotted; Princess Mary of Cambridge, light centre edged with rosy purple, fine both in the truss and the individual flowers; Mrs. Thomas Longman, lively rose; Duchess of Sutherland, white, edged with rosy purple; Lady E. Cathcart, blush, finely spotted; Minnie, white, with orange spots; Michael Waterer, rosy scarlet; La Vivandiere, large snowy white

trusses; and Henry Bohn, rosy crimson. Besides these we might enumerate many more brilliant varieties, and specimens remarkable for their size.

INSECTS.

(Continued from page 387.)

THRIPS.—These long, narrow, active insects, mostly confine their attacks to the under sides of the leaves of plants. The insect whilst young is white, and almost stationary, but when mature is of a bright brownish black, and remarkably active. It is a great plague to the Fern-grower, and equally so in almost all departments under glass. In hot, dry seasons it attacks plants in the open air, but is not general on these. The plants chiefly attacked are those with smooth leaves; the Myrtle, Azalea, Humea, Ferns, Melons, and Cucumbers, are great favourites with it; indeed, there are but few plants which at some time do not suffer more or less from it.

The leaves of the plants on which it has made its appearance are spotted with whitish green, and the spots enlarge with the spread of the insect, the leaves ultimately becoming white, and falling off. It is one of many insects which are in a great measure preventible, being fostered by a close, dry, hot atmosphere, which tends to enfeeble the plant. In a moist, well-ventilated house, plants are mostly proof against the attacks of thrips; but there are periods when it is hardly possible to escape it, as at a time when water and cold cannot be brought into play against it; thus the plants may have arrived at such a stage of growth that water cannot be used as a destructive agent, on account of the greater evil likely to arise from a damp atmosphere. When, however, plants can be syringed, water is the best preventive and remedy, the plants being syringed forcibly with water directed against the under sides of the leaves. The next best course to adopt is to afford no more fire heat than is necessary for the well-being of the plant. Another good way of keeping the insect in check is furnishing air early, and yet not inducing cold currents, or by lack of water causing a stunted, hard growth; and, above all, see that the night temperature is considerably lower than the day, and that the plants are not kept constantly exhaling, but shut up early, and with considerable moisture, especially during the growing season.

Thrips is a very fast-breeding insect, it requires a watchful eye to be kept on the plants liable to its attacks. Whenever a plant exhibits any white specks on the under as well as the upper surface of the leaves, look for the cause of their sickly appearance; and if a long, narrow, black, dark-coloured, or even white insect be found, lose no time in proceeding with the work of extermination, for delay will only allow the enemy to increase its hold, and destroy the foliage, if not the plant itself.

The best remedy for thrips is tobacco. Whenever I find one thrips I do not strive to find its companion, but decide to fill the house with tobacco smoke on the first calm evening, taking care to have the foliage of the plants dry, which is liked by the thrips, and it preserves the plants from being scorched or injured by the fumigation. The house is, of course, shut up closely, and if convenient the glass is covered with mats or canvas, so as to keep in the smoke. The house is filled so full of smoke that a plant cannot be seen from the outside. In the morning the floors, walls, and other surfaces, but not the leaves of the plants, are syringed or sprinkled with water, and the house is kept as close as possible consistently with the safety of the plants. In the evening following the fumigation, the plants are syringed, the water being forcibly directed against the under sides of the leaves, and in the morning this is repeated. In the afternoon the plants are examined, and if any thrips are found, as there assuredly will be if the plants were much infested, fumigation is repeated to the same extent as on the preceding evening but one. Next morning the plants are thoroughly syringed, and again in the evening. This will be found an effectual means of destroying thrips which are hatched, but no amount of fumigation with tobacco will kill the eggs, and in cases of severe or rather continued attacks, eggs will be plentiful, and the insect will appear in a few days as if no means had been taken to ward off its attacks. In such cases I usually syringe the plants with 2 ozs. of soft-soap in a gallon of soft water, applying the liquid especially to the under sides of the leaves, and turning the plant round, it being laid on its side in the first instance. The foliage, stem, and every part of the plant should be thoroughly wetted. It must be borne in mind, that all plants cannot endure the wetting of their foliage with soft-soap solutions, and among these are the Vine, Cucumber, Melon, Pelargonium, Azalea,

Calceolaria, and Humea; but there are some to which soft-soap solutions can be used without injury, as the peach, when the fruit is small, the Myrtle, Camellia, and most plants with smooth leaves.—G. ARBEY.

(To be continued.)

RHODODENDRONS AND THEIR CULTURE.

As this is the time for the lovers of Rhododendrons to be on the alert, a few remarks on the subject may be useful.

Rhododendrons may be cultivated in a variety of ways, and may with care be made objects of the highest interest for decorative purposes both in and out of doors. They are moisture-loving plants, but the water must not stagnate about their roots. They almost adapt themselves to any climate if they are properly cared for, succeeding either in beds or as single specimens. They should have proper drainage afforded them, and with that view the place intended for them should have the soil taken out to the depth of 4 feet, and a foot deep of drainage placed at the bottom. Cover the drainage with litter to prevent it from becoming choked, and fill up with the compost, raising it above the surface to allow for settling. Good peat, if it can be obtained, mixed with fibrous loam will answer for them; but in many places peat cannot be had, therefore other soils have to be used. I have found Rhododendrons succeed well in the following compost—viz., bog earth, leaf mould, and mellow loam in equal parts with a liberal sprinkling of sand. A little well-decomposed cow dung will be of service.

If the Rhododendrons are planted in beds, I prefer these to be drier below than above the surface, for should the season be dry a sort of basin is thus formed to water in, and room is afforded for top-dressing or mulching if such be required. Some people raise mounds or banks for them; but I think that plan is objectionable if it can possibly be avoided, for in dry weather I have known them suffer very much from drought, and in time die altogether. If they are planted on the sides of banks we must leave them to take their chance.

I know of some instances in which Rhododendrons have succeeded in pure loam without any preparation. In some counties, Radnor for instance, Hereford, and other places, I have seen fine specimens of Rhododendrons growing without any preparation of the soil previous to planting, and in Yorkshire too, if I recollect aright, many years ago I saw growing in Dr. Herbert's garden at Spofforth, Yorkshire, Rhododendrons planted in loam, the substratum being granite rock, and at that time they appeared in good health. Those who may have seen the Rhododendrons at Stourhead and other places where they are grown extensively, cannot but admire their diversity of colour and the proportion of their growth. Such sights are well worth a day's journey to see, and would be more so could some of the more brilliant-coloured varieties now to be met with be worked on the already-established plants.

My idea of a bank of Rhododendrons is this:—I would have the plants prepared for the purpose, tall ones for the back, and others of lower growth for the front, thus forming the bank with the plants instead of heaping up the soil, which is often done to the injury of the plants.

I trust ere long to see Rhododendrons much more extensively cultivated than they are at present. I know of no evergreen flowering shrub that presents such a diversity of colours, nor any that has been so much improved in the present generation as the Rhododendron. Nothing can surpass at this season a good selection of the beautiful varieties, exhibiting nearly all shades of colour, from the purest white to the deepest maroon.

Rhododendrons are mostly well adapted to pot culture for in-door decoration, and will bear forcing well in gentle heat, but it is not wise to force the same individual plants successively if it can be possibly avoided, for if this be practised they soon become exhausted. Planted out in a conservatory they afford a magnificent display while in bloom, and if grown in boxes or pots for the same purpose, they can be removed at pleasure when their beauty is over to make room for other occupants.

The following are a few species and varieties of this noble race that answer well for pot culture—viz., Ciliatum, a splendid white, sometimes tinged with rose, and which when gently forced (and it bears forcing well), is one of the very best; Gloriosum, a beautiful blush in early spring; Gibsoni, another favourite as a pot plant; Venus, of a fine blush when opening, changing to white, very fine; Jasminiflorum, which requires time to make a specimen, but will repay any amount of care

when in bloom; Dalhousie, one of the largest white kinds in cultivation, best kept from frost; Nivaticum, white spotted with yellow, very good; Glaucum, very dwarf in habit, of a pleasing light rose colour, the leaves having a white appearance on the under side, a fine sort for pot culture; Dauricum, nearly purple, a splendid plant when in bloom, but of rather bad habit, and requiring time, patience, and care to become a specimen, but which when such is once formed will repay any amount of care with its beautiful blooms in-doors in winter; Grand Arab, a most beautiful crimson, which ought to be in every collection; Iago, very dark and good, crimson purple; Black Blotch, one of the very best; Everestianum, pale blush, beautifully fringed, very fine; Fulgens, bright scarlet, having very compact trusses; Victoria, crimson purple, a beautiful variety; and Onslowianum, a pretty blush, fine yellow eye, very beautiful. I must not omit the Countess of Haddington, with beautiful blushes on her lovely cheeks, the flowers some 3 inches in length, and nearly as much in diameter, and the plant of first-rate habit. There are many more too numerous to mention, for all Rhododendrons make fine pot plants, and will repay any amount of care bestowed upon them.

The following are a few among this numerous race that I have noticed do well with ordinary cultivation in beds, or as single specimens, and are now in bloom. Fastuosum flore-pleno, an excellent sort; Coriaceum, a beautiful white; Everestianum; Mrs. John Waterer, one of the brightest-coloured varieties we have; Blatteum, fine, large, purple; Onslowianum, blush tinged with yellow; and Nivaticum, fine white with yellow spots. Dauricum will almost grow anywhere, and is the earliest of all out door Rhododendrons, sometimes flowering in midwinter and early in spring. It should be planted in a sheltered place, and have protection from frost and wet while in bloom, then it lasts in beauty a long time. Other kinds well worthy of cultivation are—Mrs. Loudon, very fine; Erectum, a fine trusser; Grand Arab, one of the most showy kinds we have; Mrs. Snowden, a good useful kind; Barclayanum, very beautiful; Sir Charles Napier, Nigricans, Sir Isaac Newton, Reedianum, Archimedes, Rosa elegans, Blandyanum, Arboreum, Maximum, Robustum, William Downing, Diadem, Gloriosum, Chancellor, Iago, and Cancasicum is a fine white of dwarf habit. Vandyke, though a late bloomer, is one of the finest Rhododendrons in cultivation. When the colours are nicely blended nothing can surpass a moderate collection of these beautiful plants at this season.—M. H., *Acklam Hall, Middlesbrough-on-Tees.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, except for some particular occasion *Asparagus* should not be cut after this time in private gardens. *Broccoli*, plant out once a fortnight to supply young heads in the autumn, and see that the seed beds do not become too much crowded. *Cabbage*, plant out a few young Cabbage plants about once a fortnight to keep up a supply of young heads in the autumn; also do not allow the seed beds to become crowded, as will soon be the case in moist weather. *Cauliflowers*, a few young plants from the spring-sown beds had better also be transplanted at short intervals rather than a large breadth at a time. If those now coming into use are likely to be more abundant than is required for the daily consumption, some of them should be checked to keep them back, if only by pushing in the spade on one side to cut half their roots. *Celery*, a short row of this may be put out and well watered to carry on the early succession, and the young plants for the main crops will require a regular supply of water if the rain do not find its way to their roots. *Succession crops* of Lettuces, Kidney Beans, Peas, &c., sow these according to the state of the last sowings, and see that the hoe is always in motion among crops in rows, whether there are weeds or not. There is one kind of work which is rarely thought of in summer—namely, trenching vacant pieces of ground as they fall in, but no method of improving heavy soil is equal to trenching it when perfectly dry in summer.

FRUIT GARDEN.

I suppose the Tomatoes planted out against the walls must be dignified with the notice of a fruit, if only to say that, like the ridged Cucumbers, they are often allowed to become too much crowded at the starting-off. The first high wind will then shake them about in all directions, two-thirds of their shoots must be cut off to make room for the rest, and this check throws them back ten days more; after such management,

people say in October the season was too cold to ripen the fruit, or give some other excuse equally groundless. Continue pinching, pruning, and nailing-in summer wood; and if insects make their appearance on any part of the walls or on bushes or standard trees, give them no rest till they are destroyed. Boiling water is the shortest way of dealing with ants when you find their nests. Remove all suckers from Filberts as they appear; examine the young fruit, and look after caterpillars, as they are making sad havoc in some places. Shorten and remove the summer wood of Currants and Gooseberries in the manner recommended for fruit trees lately. Allow the leading shoots to grow a fortnight or three weeks longer before stopping them; the result will be superior fruit, and finer-swelled and better-ripened buds for next season.

FLOWER GARDEN.

Where the beds in the flower garden were prepared for planting-out as directed some weeks ago, it will be necessary, after the ground is properly moistened, to hoe them over, distribute the soil from the sides over the surface of the beds, and then regulate the plants for the season. Make good all failures, and in pegging the plants down place them as much as possible with their heads pointing to the north, which will cause them to be drawn upright by the sun more effectually than if they were pegged out at random. As soon as the leaves of seedling Tulips become withered take up the bulbs. Great care must be observed not to injure them, as in most cases they push a bulb down several inches into the ground. Let them dry gradually in the shade. The beds of Ranunculuses should be frequently examined, as the green caterpillar, scarcely distinguishable from the stalk, often lodges just beneath them; they are also much infested with the cuckoo-spit (*Tettigonia epumaria*). Both are seriously detrimental to the bloom. Still persevere in the extermination of the green fly on Carnations, either by brushing off or by the use of Scotch snuff. Take off the laterals as they appear, and reduce the stems thrown up by strong-growing seedlings to one, so that the energy of the plant may be directed to the buds left. If you examine the buds of Pinks closely you may find some attacked by a small grey grub, which eats its way through the lower part of the calyx and devours the inside. An infusion of sheep manure will prove highly beneficial to the plants by being poured on the surface of the bed occasionally. Continue to propagate Pansies by slips or cuttings, and every seedling of inferior merit, or which is not a decided improvement on the varieties already in cultivation, may be pulled up.

GREENHOUSE AND CONSERVATORY.

Many of the greenhouse Polygalas might be so managed (with a little pruning about this time, and keeping them in-doors through the summer), as to come into flower early in January. Try also *Goodia latifolia* and some of the *Crotalaria*s in the same way. Perhaps there are some who are not aware that all the *Correas* treated after this fashion—that is, kept in the greenhouse in vigorous growth all the summer, will begin to flower late in the autumn, and continue to do so throughout the winter, supplying the place of the *Fuchsias*. The Mexican *Fuchsia splendens* is a late spring-flowerer, but if it is treated for the next three or four months as one would forcing *Heliotropes*—that is, cramped at the roots and allowed no more water than will just keep it alive, then giving a good shift and forcing it with the *Roses*, it will flower by the end of February. The planting-out in the open ground of *Fuchsias* to be taken up in the autumn to furnish the conservatory is an excellent practice which cannot be too much followed. This is about the right time to plant out such plants. *Leonotis leonurus* thus treated will produce double the quantity of flowers that it would under pot culture. The *Brugmansias* also do well in this way. *Luculia gratissima* delights in this treatment, but about the beginning of July will be time enough to plant it out. *Gardenia florida* and *radicans* improve very much under this treatment. Turn them out about the beginning of July in peat mixed with one-third leaf mould, and they need not be taken up until the approach of frost in October; then let them be put in a close frame for wintering, whence they are brought to the forcing pit in succession. Watering and training, with attention to shading, are the principal points to attend to now in the conservatory.

STOVE.

The *Hedychiums*, *Clerodendrons*, *Vincas*, and other stove plants mentioned last spring as useful auxiliaries for flowering in the conservatory in summer, should now be in good condition for flowering, and have large portions of air to inure them

to the change. The stove requires more air now, but still keep up a strong moist heat, and let the plants stand clear of each other.

COLD PITS.

Camellias, Chinese Azaleas, and the finer hybrid *Rhododendrons* that have been kept in heat since they flowered ought now to be turned into these pits for three weeks or a month before they are put out of doors; and as they will be nearer to the glass than they have been in the houses, they ought to be shaded slightly during hot sunshine. The best time of the whole year to graft them is when the bottom of this year's growth is hard and begins to turn brown, and the three families will take by grafting as freely as the Apple and Pear. Cold turf pits are just as useful in summer as they are in winter; and if they are only covered with the thinnest calico stretched on frames hundreds of plants will live and thrive in them better than anywhere else. Some of these should have a thin layer of soil to plant out young seedlings in, or newly rooted plants, and for young tender *Roses*, &c. All sorts of flower-garden plants may be propagated in them for the next three months, either in pots, or, which is better, planted out in a bed of light soil covered over with an inch of sand. Many other uses for them will occur in practice. Any labourer can put up such pits, and their size should correspond with that of the Melon pits in the same establishment, so that the frames may do for either.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Such heat after the rain was trying to some of our vegetables, and *Cauliflowers* heading nicely began to hang their leaves, so that we were forced to give a little water, as we had not time to shade. The soil on examination was found to be moist enough, but the little additional water just kept the leaves bold and unflagged; if they droop much even in bright sun, though all right in the morning, the heads are apt to come more open. To insure whiteness as well as compactness, it is well to turn some half-broken leaves over the flower, as the whiter the vegetable is sent to table the more delicate it looks. Except a piece of fresh-planted *Cauliflowers*, all other vegetables have been left to their fate.

Cabbages, &c., have swelled up wonderfully, so that our different plantings for succession threaten to come in too much at a time. Veitch's Matchless Cabbage still proves itself a fine variety for the amateur having little room. It can be grown to great perfection if planted one foot apart each way. Nevertheless, some of the larger kinds are useful when a large number of servants have to be supplied. In a nice plantation of Veitch's there are only three or four "rogues," and of the different sorts grown there has not been a single plant that has commenced running to seed. All the vacancies we owe to our visitors the rabbits. Some years ago we had many bolters. We hardly knew how the rabbits got out, but we found out how they got in. They went up outside a wall some 8 feet in height by means of some pea sticks and the bole of a tree, traversed the top of the wall for a distance of 40 feet, and then dropped down inside, a depth of more than 6 feet. Seeing the mark where they dropped, one or two were trapped; but their system was only stopped by placing wire netting across the top of the wall, past which they could not go.

Our other work was chiefly confined to routine, sowing Peas, *Cauliflowers*, Turnips, Radishes, &c., and giving water to Potatoes at the foot of walls, where they were becoming very dry, though almost fit for using. We may also mention that in forwarded and protected crops we have only met with two roots that had a trace of the dreaded disease. We have had nothing of that peculiar rotting of the stems below the surface alluded to last season.

FRUIT GARDEN.

Melons.—We are much obliged to Mr. Hall for his valuable remarks in page 387. We have long been so struck with the propriety of the cause he points out, that though we cannot always secure what we want, yet we would rather, if possible, not wet the foliage of *Melons* at all, if when under glass we could not have the leaves dry at least before the sun struck on them. In fact, if all be right, we hardly syringe *Melons* on this account, and we have had fine crops, which, besides watering the soil when necessary, never had any moisture on the foliage that could be avoided. Mr. Hall will perceive that we left air on at night, so that there was no confined vapour.

However generally applicable his remarks, and the having the foliage dry in the evening before much artificial heat is given we consider to be of first importance, still that will not explain the mystery how these two lights in the pit have been similarly affected for some years in the case of Melons, and nothing else, whilst the other three lights have generally escaped. If there be any difference in the artificial heat, that heat must be lowest in these two lights, as farthest removed from the boiler.

On a very sunny afternoon lately we noticed that the brick end of the pit inside was rather whiter than we like in summer, and we thought that the reflection of heat from the whitish surface in the afternoon might have something to do with this parching-up and scalding of the older leaves. A brush and some soot water soon darkened the wall sufficiently to make it an absorber rather than a reflector of sun heat, but in the two following mornings the large leaves in the plant nearest the end were as bad, if not worse, than before. We have trained strong vines from plants planted 5 or 6 feet from the end to fill the space, and these as yet are untouched in this way in their foliage. In this case the mystery is to us a mystery still, though we hope to benefit, and many more will be likely to do so, from Mr. Hall's very appropriate remarks as to dryness of the foliage, especially in early forcing.

The dung frames have thoroughly beaten the pit this season as to Melon-cutting, but, then, the pit was planted later, and, besides, the rats made such havoc with the young fruit. These rats found their way chiefly through the wall plate, and in addition to taking a ferret all through the beds every night, to leave at least some scent behind him, we shut him up in one of the worst haunts some nights. But as a hint to those with lots of young game near at hand, we may mention that the ferret scratched a way for himself up the wall, and made a hole through the somewhat-soft wall plate, and was only found after being at liberty a couple of days. There can be no question that the trail of the ferret gives a notice to the rat that he had better be out of the way.

After one of the hottest days last week, with the thermometer 85° in the shade, a blight seized some of our fruit trees, attended with honeydew, and lots of insects, especially on the Cherries. In this case the honeydew appeared before the fly, green or black. Some insist that the fly is the cause of the honeydew; we are inclined, on the other hand, to consider that the fly is a consequence rather than a cause, and that it comes to partake of the sweet food thrown out by a debilitated state of the tree. The observation of the circumstances at the time clearly showed that the trees were unable to meet the vast amount of evaporation demanded from their perspiring surfaces in such a high temperature, and that there was in consequence a thickening of the juices of the plant, and the more sugary part in a viscous state was forced through the foliage, which for a time would arrest the very free perspiration. This in cultivated trees would, if let alone, do this too much, and hence the syringe and the sponge are used in extreme cases to remove it. It appears less frequently under glass than in the open air, as under glass plants are not exposed to such sudden extremes. When the leaves are thoroughly varnished with honeydew they are as incapable of performing their functions as if covered with a coating of glue or isinglass. We did not do all that was necessary in the way of syringing, &c., but will have more time to lash those out of doors well before this meets the eye of the reader. Clean soap water one evening, followed by clean water the evening following, will generally make all right out of doors if persevered with.

In our orchard houses in these very hot days we prevented extreme heat by just sprinkling the outside glass with water coloured by whitening, and sprinkling with water the floor inside.

Vineries.—Thinned Grapes when cool in the second vinery, and have most of the plants out of the first. In the late vinery the weather has been everything for Vines in bloom and setting, and that with only a brisk fire heat in the few dull days when we had rain. The sun has been powerful enough to give a temperature from 75° to 85° during the day, and that, with damp paths and floors slightly sprinkled, gave a nice temperature for setting, with sun heat alone, and a moderate application of air, chiefly at the top of the house. Muscats have just had a dry hand pulled gently along their bunches—a practice which is a good one. This should be done when the sun shines brightly, and a few minutes will suffice to go over a great many bunches.

These late Vines have never seen the syringe or water on

the canes or foliage. Most likely, when all the bunches are set we shall give the house a good syringing to clear off more effectually all the remains of bloom, &c. The rods or stems generally break as well without damping or syringing as with it in the case of late Vines, and our water is generally such that we are afraid to use it much among Vine foliage. What rises as vapour from floors and pathways will be as clear and free from sediment as if distilled.

We notice on some of our Peach trees already a greyish-like appearance on the foliage, the result of sediment from frequent syringings with water, not so pure as we would wish it. For dread of the red spider we have been afraid to avoid syringing altogether in the case of the Peach, as we have long done in the case of the Vine; but when we have tried Peaches on a smaller scale under glass, and paid extra attention to syringing paths, floors, exposed walls, &c., before shutting-up, we did not find that the red spider was very troublesome, the foliage was bright green to the end of the season, and often in the morning the points and even edges of the leaves would be hanging with tiny dew drops.

Of course where water is clear and pure, free from earthy and chalky sediment, the syringe or garden engine is a great refresher and promoter of cleanliness; but when water holds such sediment, however clean it looks, it will leave the foliage anything but bright green at the end of the season, then it is well to know that we may do with less syringing if we do not soak our floors and borders, so as to paralyse root-action if the roots are there, but use about the same quantity of water in syringing the exposed surfaces as we would have done over the trees. In a hot day this may often be done at mid-day with advantage. The plants absorb the vapour as it rises, and distressing perspiration is for a time lessened, and such slight waterings on the ground or floor will never encrust a leaf with an earthy sediment.

We would not advise any reader to enter so fully into these remarks as to keep the syringe at rest as respects foliage, but we would certainly like if some of our enthusiastic amateurs would try a few trees in a small house with little or no syringing overhead, and report faithfully the result. Very trifling circumstances often lead to great changes in practice. But for such considerations as these referred to by Mr. Hall, and the knowledge that the Melon comes naturally to fine maturity with moisture enough below, but little moisture overhead, we might have gone on syringing Melon plants every night. But for water not free enough from sediment when frequently used, we might have syringed Vines overhead night and morning before they began to colour, as we used to do, though we are not aware that any bad result has attended the disuse of the sprinkling over the foliage, and it is seldom, indeed, that we have seen red spider on Vines even with no syringing.

From what little we know of the very varied climates of Persia, its excessive colds and burning heats, its hard clays and sterile sands, we should come to the conclusion that the finest Peaches and agricultural produce would be obtained from its northern parts, where in summer the climate is warm and moist. The latter produced more from exhalations from the marshes, and from the Caspian, than from the rainfall at that period of the year. Such gentlemen as Mr. Burton, of Hatfield, who could tell us from their practical observation, under what circumstances the Melon and Peach thrive best, and produced the richest fruit in such a country as Persia, of which the Peach is popularly supposed to be a native, might give us much help in the culture of such fruits here. True, under artificial circumstances, as under glass, we may, and, as in the case of the Pine Apple, do succeed all the better by not following too strictly the teachings of Nature; but still, the circumstances under which plants thrive best when grown in their natural habitats always furnish us with valuable ideas for regulating our practice, though it might be unsuitable to imitate these circumstances exactly. The idea we would wish to throw out for consideration is, whether in this comparatively dull and variable climate of ours, we do not in our houses have rather too much of the shower bath over the foliage, and whether that practice even when the water is pure, does not help to give size at the expense of flavour in the case of fruit, and spongy watery wood instead of smaller but firm shoots.

In addition to the Vines referred to, we may mention that perhaps the finest flavoured Melons we ever grew were thus treated. Strong plants in 7-inch pots were used, just beginning to run freely. They were turned out into rather stiff fresh soil—in fact a clayey loam, and made somewhat moist before planting, so that it was beaten pretty firmly together, and trodden firm

after planting. By means of small holes this stiff soil was well watered afterwards, and as soon as the surface was a little dry an inch of dry riddled mushroom dung was placed over it to prevent evaporation from the soil. In one case no more watering or syringing was given. In a second case, by means of upright drain tiles water was transferred to near the bottom of the soil, just as the Melons commenced swelling to ripening. Neither foliage nor the surface of the soil was wetted from the day of planting, but a few pans were set inside supplied with water. These experiments are best done in small places where the experimenter can attend to all himself. An assistant or a labourer may easily derange the whole. We merely mention it that people may see that the daily shower bath over the foliage is not absolutely necessary. These Melons had no great amount of artificial heat except in dull weather, and with a temperature averaging 60° at night, with air given early. So little was air given, that the thermometer often rose to 90°, and 5° more in the heat of the day when the sun was bright; but it rose gradually and fell gradually, and there was no confined scalding vapour.

ORNAMENTAL DEPARTMENT.

The hot days were trying to some fresh-planted subjects; but instead of deluging the ground with water and thus cooling the soil about the roots, and as shading such numbers of plants would be out of the question, the garden engine was employed twice or thrice during the day just to sprinkle the foliage, and what fell on the soil was soon raised about the plants by evaporation. One engine full of water would thus do a great deal of this refreshing work. One reason why our planting the flower garden takes so much time is the necessity of supporting most of the plants on account of the wind; and for this purpose we use rough bushy twigs, not very pretty at first, but which are soon concealed, and then they hold the plants quite firmly and securely through the season.—R. F.

COVENT GARDEN MARKET.—JUNE 3.

We have had a continuous steady supply, and business is rather more satisfactory than it was, but still falls far short of what we have been accustomed to at this season. Pines, Peaches, Nectarines, and Grapes are lower-priced than usual, and brought in much larger quantities. French produce is also amply supplied, and consists of Apricots, Cherries, Figs, Melons, and Strawberries, with the usual description of Salads, &c. Large arrivals of new Potatoes have reduced the price to 2½s. per cwt.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	3	0	5	0	Melons each	4	0	8	0
Apricots doz.	2	0	4	0	Nectarines doz.	10	0	2	0
Cherries lb.	2	0	3	0	Oranges 100	4	0	10	0
Chestnuts bush.	0	0	0	0	Peaches doz.	18	0	33	0
Currants ½ sieve	0	0	0	0	Pears (dessert) .. doz.	0	0	0	0
Black do.	0	0	0	0	Pine Apples lb.	8	0	10	0
Figs doz.	12	0	18	0	Plums ½ sieve	0	0	0	0
Filberts lb.	1	0	0	0	Quinces doz.	0	0	0	0
Cobs lb.	0	9	1	0	Raspberries lb.	0	0	0	0
Gooseberries quart	4	0	8	0	Strawberries... per lb.	1	6	6	0
Grapes, Hothouse.. lb.	8	0	12	0	Walnuts bush.	10	0	16	0
Lemons 100	8	0	12	0	do. per 100	1	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes doz.	2	0	3	0	Leeks bunch	0	3	0	0
Asparagus 100	2	0	6	0	Lettuce per score	0	6	1	0
Beans, Kidney 100	1	6	0	0	Mushrooms pottle	2	0	3	0
Beet, Red doz.	2	0	5	0	Mustd. & Cress, punnet	0	2	0	0
Broccoli bundle	0	9	1	0	Onions per bushel	4	0	6	0
Brns. Sprouts ½ sieve	0	0	0	0	Parsley per sieve	3	0	4	0
Cabbage doz.	1	0	1	6	Parsnips doz.	0	9	1	6
Capiscums 100	0	0	0	0	Peas per quart	1	0	1	6
Carrots bunch	1	0	0	0	Potatoes bushel	4	6	5	0
Canflower doz.	3	0	8	0	Radishes do.	4	0	6	0
Celery bundle	1	6	2	0	Radishes doz. bunches	0	6	8	9
Cucumbers each	4	1	0	0	Rhubarb bundle	0	4	0	8
Endive doz.	1	0	0	0	Shallots basket	0	0	0	0
Fennel bunch	0	3	0	0	Shallots lb.	0	8	0	9
Garlic lb.	0	8	0	0	Spinach bushel	2	0	3	0
Herbs bunch	0	3	0	0	Tomatoes per doz.	3	0	4	0
Horseradish bundle	3	0	5	0	Turnips bunch	0	0	0	0

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

CURRENT TREES WITH YELLOW LEAVES (C. C. E.).—The leaves are very beautiful, and if the trees would permanently produce such golden foliage

they would be an acquisition as ornamental shrubs. We think that the seven trees which produce them must be declining in vigour. If so, the addition of manure and mulching the surface over the roots would restore the natural green colour.

ACUCUA POLLEN (B. M. Royle).—The male blossoms have passed away a fortnight since.

DAPHNES (J. Lee).—You can obtain them from any nurseryman. There are many species, and they vary in price.

VINE CUTTINGS FOR NEW ZEALAND (T. Lord).—We think that they would arrive in a condition capable of vegetating if hermetically enclosed in gutta percha and sent by mail *via* Panama.

POLYANTHUSES (Auricula, Dublin).—Our correspondent, as well as many others, wishes to purchase a collection of these and other old-fashioned flowers. If florists who have them would advertise that fact, and state their readiness to send catalogues, we think they would find the announcement remunerative.

FLORAL COMMITTEE (A Subscriber, P.).—No fee is needed. Send your seedling Pelargonium on the Monday preceding the day of meeting, and write to the Assistant Secretary, Mr. Richards, at the same time.

SEEDLING PANSIES AND MINULES (C. S., Hillside Cottage).—The white seedling Pansy is a very fine flower, but not better than nor distinct from Queen of England and other whites. The hybrid Minulus between cupreus and another is a nicely formed flower, but too dull in colour. The seedling from Stuart's hybrid is bright and well marked. There are many seedlings like it.

CANDLE PLANT (An Inquirer).—If you send us a specimen we will endeavour to identify it.

NECTARINE LEAVES BLISTERED (Old Subscriber).—The leaves are blistered in consequence of cold nights succeeding hot sunny days. The circulation of the sap is obstructed, the whole or part of the leaves become inert crumpled masses, and are mostly attacked by white fungus or mildew. There is no remedy, but the evil may be prevented by affording a warm covering at night. It never shows itself on trees under glass. The blistered leaves should be picked off at once, and every encouragement afforded the tree to produce fresh healthy foliage.

GREEN FLY ON ROSES (E. A. S.).—I hand-kill and syringe. This is a sure cure. I have no faith in remedies. The leaves of my wall fruit trees (about 138 Peaches and Nectarines), are clean and beautiful. I never knew thrips and aphides so abundant. The peach aphid and the Aphid rose are not the same. Soft-soap contains arsenic; this and quassia, as you suggest, would injure nothing.—W. F. RADCLIFFE.

NERIUM CULTURE (Titmouse).—It is a good practice to place the pots in saucers kept full of water during the season of growth. They delight in moisture and a hot bright atmosphere.

POT ROSES MILDWEED (Idem).—Mildew usually shows itself on plants kept in a close moist atmosphere. The best remedy is to dust with flowers of sulphur the parts affected. A good preventive is to wash the walls of the house with lime and flowers of sulphur, in equal quantities, brought to the consistency of whitewash with a solution of soft-soap, 2 ozs. to the gallon. Also lightly coat the hot-water pipes with sulphur, brought to the consistency of putty with soapy water. Apply it with a brush.

PROPAGATING PERENNIALS (N. G.).—Saxifraga hypnoides is propagated by division of the plant after flowering, the divisions being taken off with a small portion of root to each. Plant them in light sandy soil, and keep moist and shaded until they become well rooted. Yellow Alyssum is increased by cuttings from now to September, the cuttings being taken from the growing point with a portion of the preceding year's stem to each. Insert them in sandy soil, afford shade, and keep them moist until well rooted. The white may also be propagated by cuttings and seed, and so may the yellow by seed. Now is a good time to sow it. The Double Lychnis may be propagated by cuttings of the young shoots from 4 to 6 inches long, taken with a small heel. Delphiniums are increased by division of the roots in spring. Each division should be taken off with a portion of root attached to it, and may be planted at once where it is to remain. They may also be raised from cuttings; the side shoots rising from the crown and not flowering may be slipped off, preserving a small heel to each, which should be pared smooth at the end, and inserted in sandy soil, giving shade from sun, and keeping them moist until rooted. Delphiniums are also raised from seed, which may be sown now. The herbaceous Veronicas are increased by division in spring, or now if they are not in flower, each shoot or division being taken off with a portion of root, inserted in sandy soil, and kept moist and shaded until growing freely. The shrubby Veronicas, as V. Andersoni, are propagated by cuttings, the young shoots being taken off with three joints, cut across below the lowest joint, and the leaves removed from the two lowest ones, putting in the cuttings round the sides of the pot and up to the leaves left. The pot should be well drained, and filled to within an inch of the rim with sandy soil, and then to the rim with silver or sharp sand. Place it in a frame, and keep close, moist, and shaded until the cuttings are rooted.

TAKING UP CROCUSES (Idem).—It is well not to take them up oftener than every three years, and then only for the purpose of dividing the roots, affording them more room, and enriching the ground, planting them again immediately. The operation is best performed as soon as the bedding plants are removed, or early in October.

FORGET-ME-NOT FOR SPRING BLOOMING (Idem).—The best blue Forget-me-not for spring blooming is *Myosotis montana*; but *M. palustris*, *M. arvensis*, and *M. alpestris* are most generally grown. The seed should be sown at once.

SOWING ANNUALS TO BLOOM IN OCTOBER (Idem).—Annuals to flower in October should be sown from the middle of June to the first week in July, and Gladioli to bloom at the same time ought to be planted in the second or third week in May.

PELARGONIUM GRAFTING (Idem).—You may graft your Giant Pelargonium with any of the Zonal kinds, but we do not think budding would be successful. Madame Kendatler, rosy salmon; Clipper, scarlet; and Rebecca, cherry, would be suitable kinds.

MAIDEN-HAIR FERN FRONDS DESTROYED (R. H. M. P.).—We think the fronds must be cut off by slugs, of which you may probably discover the traces, and if so, examine the plants after dark with a lantern. You will

and full instructions in the "Fern Manual," published at our office. It will suit you. You can have it free by post if you send sixty-four postage stamps to our office with your address.

MELON LEAVES SCORCHED (*Hortensis*).—There is no red spider on the leaf sent us, nor can we perceive any trace of the leaf having been infested with that insect. We think the leaf has been scorched by the sun's rays acting powerfully on it whilst wet, or from want of air during the early part of the day. The leaf is the thinnest and most rusted we ever saw. Give more air, and afford slight shade from bright sun.

WATERING PLANTS IN A GREENHOUSE (*F. K. A.*).—The best time for watering plants at this season in a greenhouse or elsewhere is in the evening, as the plants have the full benefit of the water for repairing the waste through evaporation during the day, and the moisture produced by watering is very beneficial to the plants at night, as they then inhale moisture.

RED SPIDER ON CUCUMBERS (*C. P.*).—We suppose your house is heated, and in that case we would have the pipes warmed to 160°, not more, and paint them whilst at that heat with a composition of sulphur, brought to the consistency of paint by a solution of soft soap, 4 ozs. to the gallon of water. The house should be shut up close and the pipes coated on every part with the sulphur composition, applying it with a brush. A few light sprinklings over the pipes it is well to give after they are coated with the sulphur composition, water being employed of the same temperature as that of the house, or rather of the pipes, so as to raise a good steam in the house, and thoroughly impregnate the atmosphere with sulphur fumes. This should be done in the evening, and a good watering given to the plants, and a thorough syringing in the morning. The back wall (if any) should be painted with the same composition as the flues or pipes. We would further advise your syringing with soft water, made by pouring thirty gallons over a peck of fresh soot, stirring it well, and syringing with the liquid when it becomes clear. The liquid well stirred up may be also used for watering the plants, and is an excellent manure for them.

STOPPING MELON PLANTS (*Idem*).—The shoot on which the fruit is produced, after being once stopped, should have the points of all succeeding growths taken out at the first joint above where last stopped. If the plants are weak the shoots may be allowed to make two or three leaves, then take out the points of the shoots. Without good foliage there cannot be fine fruit.

CUTTING OFF WOOD ABOVE GRAFT (*A. B.*).—The union of stock and graft being complete, and the graft growing freely, you may cut away the wood of the stock opposite the graft quite close to it now, but we prefer doing it the last week in June or beginning of June. It should be cut off slopingly, the knife being drawn towards the graft, and the face of the cut will then slope from, instead of as at present to the graft.

REPORTING PEACH TREES (*C. P.*).—You may report your Peach trees now if you do not value the fruit on them. Be sure they are well watered first, and the potting done finally.

PELAGONIUM SEED (*Sherbourne*).—*Pelargonium* seed sown in pans and covered lightly with fine soil will, on being placed in a hotbed of 65° to 80°, produce seedlings within a fortnight.

VERBENAS IN POOR DRY SOIL (*Idem*).—Mulch the bed or beds all over with an inch thickness of leaf mould or short manure mixed with an equal quantity of soil. Give the plants a good watering once or twice a week with guano water, 1 oz. being dissolved in a gallon of water.

WATERING PEACH AND NECTARINE TREES (*Idem*).—The trees may have a thorough watering with guano water, at the rate of 4 oz. to the gallon, once every week in dry weather, and fortnightly in moist weather, until the fruit commences ripening. A good syringing with water every evening in hot dry weather will be of great benefit, discontinuing it after the fruit commences ripening.

INSECTS (*C. M.*).—Your Peach and Apricot leaves have their under sides gnawed by the caterpillars of one of the case-bearing Moths, *Coleophora hemerobella*. We know no other remedy than hand-picking and burning the small moveable cases and their inhabitants. (*H. F. H.*).—We found no insects in the smashed box which contained your gnawed Laurel leaves. We suppose they have been attacked by the caterpillar of some Moth; but in the absence of more precise information we can only recommend careful examination of the trees.—*W. (Stockport)*.—It is one of the millipedes, *Julus pulchellus*. It is found on the roots of Beans, Cabbages, &c.

NAMES OF PLANTS (*P. Newton*).—*Passiflora (Tescosonia) manicata*. (*A Constant Reader*).—*Callistemon lanceolatus*. (*H. H. P.*).—1, *Veronica chamaedrys*; 2, *Cotoneaster microphylla*; 4, *Aspidodermis luteus*. (*W. S. H.*).—1, *Cydonia japonica*; 2, *Polygala myrtifolia grandiflora*; 3, *Mesembryanthemum formosum*; 4, *M. attenuatum*. (*A Constant Subscriber*).—1, *Leptospermum scoparium*; 2, *Fabiana imbricata*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending June 2nd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 27	29.067	29.064	73	37	57	55	S.W.	.00	Clear and fine; very fine; fine, starlight.
Thurs.. 28	29.181	29.140	74	39	58	55	S.E.	.00	Fine, sunshine; very fine; densely overcast.
Fri... 29	29.556	29.504	77	51	60	56	E.	.40	Overcast; heavy storm, thunder, lightning and rain; cloudy.
Sat... 30	29.902	29.892	87	44	61	55	S.E.	.00	Overcast; very hot, fine; very fine at night.
Sun... 31	29.900	29.894	73	38	60	55	S.E.	.00	Very fine; exceedingly fine; clear, rather cold at night.
Mon... 1	29.916	29.852	77	47	60	57	S.W.	.00	Hazy, fine; very fine; clear and fine at night.
Tues... 2	29.888	29.844	76	36	60	57	N.W.	.00	Dull and hazy; fine; heavy clouds; overcast.
Mean	29.973	29.913	77.43	41.28	59.28	55.71	..	0.40	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

PACKING EGGS IN SAWDUST.

As there generally seems to be great disappointment in the hatching of eggs that have travelled, and some correspondence has arisen on the materials best suited for packing them, I send you the result from thirteen Black-breasted Red Game eggs I received from Mr. Wheeler, of Carlton, Notts. They travelled a distance of 140 miles, and yet produced eleven good strong chickens, and were packed in sawdust, which that gentleman tells me is the material he always uses, and which he considers has no superior. It certainly has the advantages of cheapness, cleanliness, and being readily procured.—*CONSTANT READER*.

BATH AND WEST OF ENGLAND SOCIETY'S POULTRY SHOW.

A most excellent Exhibition of both Poultry and Pigeons in connection with this Society, commenced on the 1st inst., at Falmouth. The long distance separating Falmouth from the midland and northern districts may have exercised an unfavourable influence as to the number of entries, yet in another way it told well, for though these districts contain many of our principal poultry yards, no doubt can exist that the expenses of carriage to so distant a locality weighed out in most of the classes the majority of indifferent specimens that so commonly help materially to make a show great in numbers rather than in good quality. We noticed, however, birds that were the recipients of first prizes from places so far distant as Hull and Sunderland.

It appears this season's month will be a very early one—in fact, not a few of even the prize birds betrayed symptoms of fast-approaching change of plumage. *Spanish* fowls were excellent, though as might reasonably be expected at this season, they were not shown in the

really faultless condition they might have been at an earlier date. *Dorkings* were in similar condition, and some few proved very gouty, though the majority were certainly good birds. In *Cochins-Chinas* the *Buffs* were the best shown. Partridge-coloured were next, and *White* ones were of fair-class quality. *Brahmas* were good, especially the *Dark* ones, though many had commenced their moulting. *Gans* were well shown as a whole, and the *Hamburghs* were especially good. *Polands*, except the *Golden*, were as good as could be wished for. The "Any other variety" class contained as good *Andalusians*, *White Spanish*, and *Black Hamburghs* as we have seen for some time past.

Ducks, Geese, and Turkeys were especially good, and the variety class for *Ducks* was of a very superior character indeed. The classes for single cocks were not heavily filled, but the birds sent were good.

The division of the Show for *Pigeons* was never so well filled at any former meeting of the Bath and West of England Society as on this occasion, and it remains a matter for consideration whether, in the "Variety class" especially, some additions to the prizes in future years might not with both justice to exhibitors and benefit to the receipts of the Society be allowed.

The very efficient services of the poultry Stewards, Dr. Brent and Mr. Bush, left undone nothing that was necessary for the perfect welfare and comfort of the birds exhibited, and as the weather was very propitious everything passed off most satisfactorily.

SPANISH.—First and Third, E. Jones, Clifton. Second, T. Bamfield, Clifton.

DORKINGS (Coloured).—First, R. Trevithick, Hayle, Cornwall. Second, Col. H. B. Lane, Lily Hill, Bracknell. Third, L. Patton, Taunton. Highly Commended, L. Patton; Col. H. B. Lane.

DORKINGS (White).—Second, Mrs. E. J. Hartwell, Bridgwater.

COCHIN-CHINA (Cinnamon and Buff).—First, W. A. Taylor, Manchester. Second, A. G. Crewe, Helston, Cornwall. Third, Col. Stuart Wortley, Grove End Road, London. Highly Commended, J. H. Dawes, Moseley Hall, Birmingham. Commended, J. Ralph, Perranarworthal, Cornwall; Hon. Mrs. Sugden, Wells.

COCHIN-CHINA (Brown and Partridge-feathered).—First and Third, J. Stephens, Walsall. Second, H. S. G. Stephenson, Lymington Rectory, Weston-super-Mare.

COCHIN-CHINA (White).—First, H. Loe, Appuldramhoe, Godshill. Second, J. H. Nicholls, Tanziar, Lostwithich. Third, F. Haworth, Haslingden, Lancashire. Highly Commended, H. Hobson, Walsall.

BRAMA POOTRA (Dark).—First, J. K. Fowler, Prebendal Farm, Ayles-

bury. Second, Col. H. B. Lane. Third, Col. Stuart Wortley. Commended, J. H. Reed, Calstock, Cornwall.

BRABMA FOOTRA (Light).—First, F. Crook, Forest Hill, Kent. Second, H. Dowsett, Pleshey, near Chelmsford. Third, E. H. James, Plymouth. Commended, J. Pares, Postford, Guildford.

GAME (Black-breasted and other Reds).—First, Rev. G. S. Cruwys, Cruwys Morchard, Tiverton. Second, A. Travers, Fulmouth. Third, S. Matthew, Chilton Farm, Stowmarket. Highly Commended, S. Dupe, Evercrech, Bath.

GAME (Duckings and other Greys and Blues).—First, S. Dupe. Second, S. Matthew.

GAME (Any other variety).—First, Rev. G. S. Cruwys. Second, S. Matthew. Third, Rev. F. Watson, Kelvedon, Essex. Commended, A. D. Edwards, Huddersfield.

HAMBURGS (Golden-pencilled).—First, S. R. Harris, Cusgarne, Gwennap, near St. Day, Cornwall. Second, F. Pittis, jun., Newport, Isle of Wight. Third, F. D. Mort, near Stafford. Commended, F. Pittis, jun.

HAMBURGS (Silver-pencilled).—First, C. Haworth, Haslingden. Second, P. Pascoe, Trevaies, Stithians, Cornwall. Third, N. Barter, Plymouth.

HAMBURGS (Golden-spangled).—First, Messrs. S. & R. Ashton, Mottram Cheshire. Second, J. Medway, Newton Abbott. Third, J. Strick, Devon Great Consols, Tavistock.

HAMBURGS (Silver-spangled).—First, J. Robinson, Farisworth, near Manchester. Second, N. Barter. Third, J. A. Taylor.

POLISH (Black, with White Crests).—First, Mrs. E. Procter, Hull. Second and Third, T. P. Edwards, Lyndhurst, Hants.

POLISH (Silver).—First, Mrs. E. Procter. Second, J. Hinton, Hinton, near Bath.

FRENCH (Any variety).—First, J. K. Fowler. Second and Third, Col. Stuart Wortley.

ANY OTHER DISTINCT VARIETY (Except French).—First, F. Pittis, jun. Second, Miss S. H. Northcote, Upton Pynes, Exeter, Devon. Third, R. H. Nicholas. Highly Commended, J. K. Fowler; J. Hinton. Commended, Col. Stuart Wortley.

DUCKS (White Aylesbury).—First and Second, J. K. Fowler.

DUCKS (Rouen).—First, E. Burton. Second, J. J. Stott, Quarry Hill, Rochdale. Highly Commended, H. Dowsett; L. Patton.

DUCKS (Any variety).—First, C. N. Baker, Chelsea (Mandarin Ducks). Second, Messrs. S. & R. Ashton (Carolina Ducks). Third, T. C. Harrison, Yorkshire (Pintails). Highly Commended, S. Dupe (East Indians). Commended, Mrs. A. C. Thynne (White Call Ducks); T. C. Harrison (Carolinians and Mandarins).

GESE.—First, S. H. Stott, Quarry Hill, Rochdale. Second, J. K. Fowler. Highly Commended, L. Patton. Commended, P. Knuckey, Treleaver, Mabe, Cornwall.

TURKEYS.—Prize, L. Patton (Cambridge).

BANTAMS (Gold or Silver-faced).—First and Second, Rev. G. S. Cruwys. BANTAMS (White or Black).—First, E. Cambridge, Stoke's Croft Road, Bristol (Black). Second, Messrs. S. & R. Ashton (Black). Highly Commended, Messrs. Tonkin & Tuckey, Bristol (Black); W. H. Tomlinson, Newark-on-Trent (Black). Commended, Rev. G. S. Cruwys.

GAME BANTAMS.—First, J. H. Robinson, Sunderland. Second, F. Pittis, jun. Highly Commended, E. Cambridge; T. J. Gilbert, Truro; E. Foder, Little Carlton, near Newark.

SINGLE COCKS.

SPANISH.—Prize, E. Jones.

DORRINGS.—First, Rev. E. Cadogan, Walton Pargonage, Warwick. Second, L. Patton.

COCHIN-CHINA.—First, Mrs. Christie, Glyndebourne, Glynde Station, Sussex. Second, J. K. Fowler. Highly Commended, H. Yardley, Market Hall, Birmingham; W. A. Taylor.

BRABMA FOOTRA.—First, J. Hinton. Second, Mrs. A. C. Thynne, Penstow, Stratton, Cornwall. Commended, H. Dowsett.

GAME.—First, S. Matthew, Chilton Farm, Stowmarket, Suffolk. Second, M. A. Forde, Castle Cary, Somerset.

ANY OTHER DISTINCT VARIETY.—First, Col. Stuart Wortley (French). Second, A. C. Thynne (La Fleche). Highly Commended, J. Hinton (Silver Poland).

PIGEONS.

CARRIEBS (Any Colour).—First, H. Yardley, Market Hall, Birmingham. Second, R. Fulton, Duke Street, Deptford. Highly Commended, G. S. Hockey, Durham Down, Bristol; C. Bulpin, Bridgwater, Somerset; R. Fulton.

TUMBLERS (Almond).—First and Second, R. Fulton. Highly Commended, J. Ralph, Perranarworthal, Cornwall.

TUMBLERS (Any variety).—First and Second, R. Fulton (Black Mottled and Agate Mottled). Very Highly Commended, J. Ralph (Red Mottles); C. Bulpin.

POUTERS.—First and Second, R. Fulton. Highly Commended, H. Yardley; C. Bulpin.

JACOBS.—First, R. Fulton. Second, C. Bulpin. Commended, S. Dupe, Evercrech, near Bath; C. Bulpin.

FANTAILS.—First, C. Bulpin. Second, H. Yardley. Highly Commended, Rev. W. S. Shaw, Beechen Cliff Villa, Bath; H. Yardley; C. Bulpin.

OWLS.—First, H. Yardley. Second, C. Bulpin. Highly Commended, F. T. Parker, Rosewarne, Camborne, Cornwall.

TRUMPETERS.—First, C. Bulpin. Second, Mrs. C. Gilbert, Truro.

BARRS.—First, R. Fulton. Second, C. Bulpin. Commended, H. Yardley; C. Bulpin.

TURBITS.—First, B. Wilson, Thirsk. Second, F. T. Parker. Highly Commended, T. Phillips, Hendra Farm, near Truro; H. Yardley. Commended, M. A. Forde, Castle Cary, Somerset.

NUNS.—First and Second, C. Bulpin. Highly Commended, H. Yardley. DRAGOONS.—First and Second, H. Yardley. Highly Commended, C. Bulpin.

ARCHANGELS.—First, H. Yardley. Second, C. Bulpin. Highly Commended, R. Wilson; H. Yardley.

ANY OTHER NEW OR DISTINCT VARIETY.—First and Second, H. Yardley. Very Highly Commended and Highly Commended, C. Bulpin. Commended, H. Yardley.

Edwd. Hewitt, Esq., of Eden Cottage, Sparkbrook, Birmingham, officiated as the Judge.

NOTES ON FANCY PIGEONS.—No. 11.

THE HORSEMAN AND DRAGON.

THE father of Pigeon-fanciers, at least the father of writers on fancy Pigeons—John Moore, A.D. 1735, was a man of education. Thus he latinised the names of each variety, and in his work there are marks of decided literary ability. One little touch we have in the Latin names which he gives to the Horseman and Dragoon. He calls the former "*Columba tabellaria minor*," the latter "*Columba tabellaria minima*," thus marking the differences with nice exactness. I would also mark the difference between the Horseman and Carrier. In the English army there are heavy dragoons and light dragoons, and this just applies to these two classes of birds. They are similar in shape, but differ in bulk, each part from beak to leg differing in size. It is clear that, once adopt the vulgar spelling "*dragon*,"—Moore spells the word "*dragoon*"—you lose the nice distinction indicated by Pope's "*learned friend of Abchurch Lane*." I suppose ignorant writers were more familiar with the "*George and Dragon*" public houses, and with the three jolly postboys said to be drinking there, than with the gentlemen in Her Majesty's cavalry service; hence their mistakes. Further, the two names are both connected with the idea of motion—the Horseman the heavy dragoon, the stronger but not so swift for short distances as the rapidly galloping light dragoon. Hence by what I have written in the article on the Carrier, that the Horseman is the original of that breed and not a mere degenerate Carrier, and by what I now say concerning the spelling of the word dragoon, and considering the antiquity of the breed, neither variety should be lost sight of, and their characteristics should be clearly given.

As the Carriers should be always black or dun, so the Horseman and Dragoon should never be of those colours. This would tend to keep up the distinction in each variety, and no one would be under any difficulty as to where the Carrier ended and where the Horseman began, or as to where the Horseman ended and the Dragoon began.

I would have prizes for Horsemen greatly dependant upon colour, its clearness, and soundness—thus, clear good Reds and sound Buifs, not washed-out colours; also Pieds, and Mottles as Trumpeters.

The Horseman, although interesting from its antiquity, is in itself scarcely so pleasing as the Dragoon, it being a type of strength minus grace, whereas the Dragoon is rather a type of grace minus strength. There are scarcely any of the minor varieties of fancy Pigeons more pleasing to the eye. First among colours are the Blues, in which the metallic hues on the neck are most beautiful. The fancier who can see without admiring a pair of first-class Blue Dragoons must be either very prejudiced or deficient in powers of appreciation. Next to Blues I rank Whites, which are singularly graceful, and when flying look like flakes of snow. The one fault of both Horsemen and Dragoons is their extreme pugnacity. I recently had one of the latter who would tyrannise without a minute's cessation over the other birds, following them from roof to roof, and tile to tile, his whole life being tyranny; and he, as all tyrants ought, was put to death after every attempt being made to cure him. Dragoons still maintain their supremacy on the wing, as I saw at two recent flying matches it was reported in each case, "*a Pigeon of the Dragoon tribe won*."

Of their rivals, the Antwerps, I must say a very few words. For exhibition they, as not being birds of colour or points, are useless. Their beauty is as nothing to that of the Dragoon. Wild, restless birds, of no manner of interest save as flyers—home, breed they seem to have none, and one pair produces birds of different colours. "*If birds of the Dragoon tribe*" beat them, what is their value? Nothing at all. And as the Antwerp is, so is the Skinnum. But on all account pursue steadily the breeding of the Horseman and Dragoon.—WILTSHIRE RECTOR.

P.S.—Still not a word by first-class Carrier breeders? Are there no writers of the class of Messrs. Huie, Ure, &c.? Surely there are. If there are not, Pouters may hold their heads higher than ever, and parade the earth in conscious supremacy.—W. R.

PIGEON-JUDGING.

ALLOW me to inform the committees of forthcoming Pigeon shows, that the principal requirement is too often neglected—viz., the selecting of the judge or judges.

It is a well-known fact that many good fanciers and exhibitors have of late given up the idea of sending their birds for competition, owing to their, in too many cases, having the mortification of seeing their birds beaten by others of third or fourth-rate merit. I consider that any man who takes the office of judge ought to state distinctly in the report of the show where he considers the first-prize bird beat the second and third. It would give the exhibitor who could not attend

the show some satisfaction to know where his birds were deficient, and it would also give exhibitors some proof of the judge or judges selected being capable of at least knowing first-rate from inferior birds.

If committees wish to have their pens well filled they will do well to have men selected to officiate as judges who have given proof of their sufficient knowledge. — ROBT. FULTON, *Shandon Cottage, Duke Street, Deptford.*

STRONG VERSUS WEAK SWARMS.

I HAVE all along advocated in these pages the superior advantages obtainable by keeping bees on the non-swarming or combination-of-swarms system, as compared with their subdivision into numerous single weak colonies by the swarming plan. The contrast is never more marked than during a poor honey season, such as the last, when swarms hived singly had too generally to be liberally fed to save them from a miserable death by starvation, while non-swarming or combined-swarm colonies, besides laying-up for themselves an ample store for winter's use, yielded in addition a fair though by no means average harvest to the bee-master.

To parties engaged in business away from their homes during the day, this system is peculiarly well adapted, as all that is required is a little attention during a morning or evening to see that the wants of the colonies are duly provided for by a gradual extension of the breeding and storing space, and in due time the bee-keeper is certain of reaping as rich a honey harvest as the district and season can be expected to yield. He is saved all risk of stocks dying from want, and trouble and expense of feeding, as such strong colonies usually lay up ample store, generally in excess of their requirements, and is spared, too, the mortification of finding on his return that swarms have escaped unobserved during his absence, and are nowhere to be found. It is a poor season indeed in which swarms combined do not yield honey enough to cover their value, while if established separately they often give nothing and require feeding. What a treat, too, awaits their owner, at least once a week, or on an odd holiday, to witness early in an afternoon such stocks in full work, the crowds that pour out and in, the air reverberating with their sweetest music, and such a brisk, happy, "all the more the merrier," look about every individual bee, bespeaking great internal prosperity, and a sort of infectious determination to "go at it," quite cheering to behold; while at an adjoining weak colony will be seen the odd dropper on the landing-board, possibly heavily pollen-laden, resting to draw its breath ere it struggles in out of sight, met by an outgoing forager who takes a leisurely survey whilst resting the wing, all telling too plainly that there will be difficulty here to make the two ends meet that is positively saddening to look at.

The great secret of successful bee-keeping is to possess strong combined colonies in suitable hives, offering ready facility for supering and nadiring as required, and so advanced

that these large bodies of reapers are all ready to turn to at the moment the main source of supply of the district is available, be it clover, lime, or heather. Under judicious management results may then be attained almost beyond the belief of the bee-keeper who weakens his stocks by indiscriminate swarming. Before such swarms hived separately can have their new domiciles furnished for full work, the staple is disappearing and the season lost. This combination system is of vital importance to us poor northerners, whose honey season is exceedingly short, and the weather so cold and variable to gather it in.

Swarms hived singly and weak colonies must each have their queen, comb-builders, nurses, and guards, as well as stronger ones; indeed, a much greater proportion must remain within-doors to keep up the required temperature, and, consequently, fewer foragers can be spared to go abroad, resulting too frequently, instead of a dividend to the bee-master at the season's end, in a most peremptory "call" in the shape of a liberal supply of sugar; whereas, the strong colony during the same season will yield a good return with a considerable addition to the "rest" account. If the small antiquated manufactory, with its manager and heads of departments, will not pay, while a handsome profit at the same time accrues to the proprietor of the large establishment with modern improvements—if it is found now-a-days, that the small vessel with its captain and officers in pay will leave a loss to the owner, at a rate of freight that to the proprietor of the full-sized ship gives a remunerating return—is it to be wondered at that the former are being rapidly displaced by the latter, and why should we bee-keepers be behind the "spirit of the age?"

It is solely to these principles being so well understood and practised, that the Ayrshire bee-keepers are enabled to send annually to the Glasgow market those fine octagon supers of clover honey, whose dazzling purity, straightness of work, and completeness of finish, are unapproachable anywhere, so far as I have seen, and a source of delight and puzzle to all bee-keeping tourists. Whatever they are in their own department of "flower honey," a correspondent of mine (Mr. Matthew Mitchell, Abington), ranks equally high in "heather honey," as he has shown this season by sending some of his beautiful workmanship to Glasgow. He has made the storing of the high-flavoured product of the heath, in glass, his especial study, and for his success in this direction stands unrivalled,



having for upwards of twenty years carried off the prizes at the Moffat Show against all comers, holding in addition five silver medals and one gold one for extraordinary specimens of his skill. Dissatisfied with all English and even French glasses which he could procure, he has of late years had such made of the purest crystal, after an original design of his own, which he found to answer the purpose admirably, and from the facility they afford of storing are now being generally employed in his own district.

These glasses, although uniform in pattern, are variable as to size, containing from 10 up to 70 and 80 lbs. I send you herewith a photograph of one, whose weight filled is 87 lbs., which is at present being exhibited for sale at his Glasgow agent's, Mr. James Clark, 99, Sauchiehall Street, and is attracting considerable attention, from its great size, beauty, and completeness of finish. It is better adapted for a bee-keeper's drawing-room ornament, or the centrepiece of some large honey-warehouse, than to be set on the breakfast-table of ordinary people. These glasses are complete in three portions, the body being removable from the pedestal or stalk to set upon the hive, the bees being admitted through a circular aperture at bottom 3 inches in diameter, and when filled the glass is replaced on the stand to set upon the table; the upper portion forming the lid, on raising which the honey can be removed as required. The vase-like form of the glass, the broader portion being uppermost, the reverse of ordinary glasses, has obvious great advantages for supporting massive combs.

Having already encroached too much on your valuable space, I must reserve till a future paper a description of the hive employed by Mr. Mitchell, and his mode of inducing bees to work in glass, which like the glasses themselves are quite original, and cannot conclude these remarks more appropriately as to the advantages of strong over weak colonies, than giving his own words in a letter before me, as to the colony which yielded the large glass above referred to. He says, "I put the first swarm in the box in the middle of July, added another in two weeks after, and in another week put a third swarm into it, then put on the large glass about the second week in August, and by the 10th September it was full as you saw it, and by the end of September the same. The colony yielded me altogether, in addition to the large glass, six smaller ones filled, and three others partly so, in all 169 lbs. of honey of the very best quality; the box when I took it weighed 75 lbs.—244 lbs. of a harvest altogether, so you will agree with me there is nothing like large quantities together. I had other swarms equally good, but as they remained single the best of them did not make over 20 lbs. of glass honey."

I had the pleasure of inspecting another beautiful glass of 83 lbs., together with several smaller ones, the whole being the produce of last season's work. When it is taken into consideration that Mr. Mitchell's apiary consisted of but twelve hives in all, and his situation is so very bleak, backward, and cold that his stock had to be fed nearly till the heather came into bloom, and that all the time he had to devote to his hobby was the short intervals he could be spared from his official duties—to his credit be it told, he has notwithstanding these many discouragements, with a numerous family to support on his weekly wages, struggled onwards to the attainment of such a high measure of success as to elicit the warmest sympathy and sincerest congratulations of all his apiarian brethren, as well as—A KENFREWISH BEE-KEEPER.

FEEDING CONFINED BEES.

In describing my friend's plan for preventing his Ligurians from crossing, I omitted to state that the nucleus box should be liberally fed during the period of incarceration.—M. J., Lockerbie.

[During our novitiate in bee-keeping, we once entirely destroyed a stock in a single night by feeding it, and keeping the bees confined to their hive at the same time.]

OUR LETTER BOX.

CHICKENS DYING (*Miss Jenner*).—We see nothing wrong in your treatment of the chickens. Give them bread soaked in ale once daily. Put the hen under a coop on grass during fine days, and on no account take the chickens from her. The eggs boiled hard are good for them, but give a little cooked meat on alternate days instead.

GAME COCK'S SPUR BROKEN (*North Devon Subscriber*).—The cock is not at all injured for exhibition. That only is injurious which might be done purposely to conceal a defect.

GOLDEN-SPANGLED HAMBOURG CHICKENS (*Constant Subscriber*).—Your feeding (mustard, bread and milk, and groats), is good, and the chickens can only die from some cause which is not mentioned in your letter. You might add some meal slaked with milk. Are your chickens fed the first thing in the morning, and frequently throughout the day? Have they dust in which to bask? Have they shelter from the mid-day sun if they require it? Are the coops out on grass? Is the hen quite confined in one? If any of these things are wanting, supply them. Put worm-wood in their water.

EGGS BROKEN IN THE HEN (*N. G.*).—Your Ducks are heated. All poultry die invariably from an egg breaking internally. It is impossible to extract it, and the broken shell lacerates the delicate membrane of the egg passage, causing death. Take a wing feather, and dipping it in oil lubricate the egg passage thoroughly. It is an easy and effectual remedy.

BUCKWHEAT FOR FOWLS (*Item*).—None of our English fowls do well on buckwheat, although it is the staple poultry food of France. We have tried it thoroughly without success. Tailing wheat is in our opinion extravagant food for adult fowls. It does for chickens as part food and part play, but it is not good for adults. It is not good enough. We know no food equal to ground oats, slaked with milk if possible. You must judge for yourself how much food they require. A good green Goose should weigh 6 lbs. Oatmeal is very good food for fattening ducklings; a little meat helps them.—B.

HOBAN CHICKENS (*E. H. P.*).—Your Hoban chickens should be hatched black and white. They should have five toes; six are too many, but they are not so objectionable as four. A Hoban with four toes cannot compete; it may with six. We will shortly give all the points of Hobans in detail. At present we can only say they should be square-bodied heavy fowls, have black and white-speckled five-toed legs, top-knot and beard. The cocks may have straw-coloured feathers, but positively no red; the latter disqualify. Neither legs nor plumage should be curiously black.

BANTAM CHICKENS (*C. X. H.*).—Bantams require to be longer with the hen than other chickens. Much depends on the time of year. Now, when there is scarcely any real night, and no cold or chill, the chickens are very independent of their mother. Still, as the brooding is beneficial, we leave them as long as she cares for them. Too often the hen is spiteful towards them at this time and in this weather. It would seem as though she knew her cubs were of less value than when the elements are contrary. If the hen will keep them they should not be taken away till they are ten or twelve weeks old. A Bantam hen should not be disqualified for any accident, but the loss of part of a toe is quite immaterial.

COCKS FIGHTING (*Peace*).—There is no possibility of preventing cocks fighting at times. We allow them to have it out, and the beaten bird has generally discretion enough to choose a walk of his own. When they are bent on fighting we generally tie a bag or an empty pillow case to the end of a long pole or rod, and as the birds spar before they attack, we buffet each of them, striking right and left. If this is continued for a short time they generally give it up. If not, there is little risk in allowing them to take their chance; they are never, or very seldom, killed.

SPANISH COCK NOT CROWING (*J. R.*).—Give him bread and ale, and of camphor pills one every day, the size of a pea. If we could be assured of their health, we often wish the cocks had lost their voices.

POULTRY IN CONFINEMENT (*Black Red*).—We quite approve your place and your food. Still we think you might have more change without incurring expense; chopped kitchen scraps, bread and milk, are not expensive. We think you might allow your chickens to run in the garden if you shut the hen in her rip. We have had the gravel paths of the kitchen garden studded with ribs, in which the hens were confined while the chickens ran about. Until the fruit begins we think they do far more good than harm in the kitchen garden, and the animalcule, of which they rid the place, agree with them marvellously. The plainest answer to your question will be to advise you to provide in confinement as nearly as possible all that fowls like and get when at liberty: dust for the bath, clean and cool water, soils of growing grass cut with plenty of fresh earth, and an occasional lettuce. If not to be borne in mind, fowls do not like their food cut up. They want all green food in such form that its weight will afford sufficient resistance to enable them to tear it in pieces.

BREEDING AGE OF ROVEN DUCKS (*Subscriber*).—Roven Ducks may be bred from till they are three or four years old. With Ducks of that age we prefer a young drake. The run will do perfectly well for Hamburgs, and they will be good egg-producers. Those fowls will thrive best that have the first half of the day for their liberty.

SHORT-FACED TUMBLER DISEASED (*Inquirer*).—We fear your bird is very old. The season, however, is in his favour. Let him have plenty of sunlight, bathing, and warming food, such as hempseed. Watch for insects. We greatly fear that in spite of all care and pains your bird will be useless, and, perhaps, after a short time will die.

PIGEONS UNSETTLED (*J. F. D. M.*).—We should think that your Pigeons are alarmed by hearing or seeing rats or cats, and are consequently unsettled. We judge from your drawing that the Pigeons for which you want a name are red-shouldered Turbids, or, if not, some of the many modern German Toys.

BULLFINCH COUGHING (*Marguerite*).—There may be a possibility of curing a bird of a cough and shortness of breath by putting a little saffron in the water, and removing the bird to a warm, but not too hot temperature. Birds will not do well kept in a room in which gas or a coke stove is used.

CANARY WITH LONG CLAWS (*Mary Peck*).—The nails of the bird should be cut with a pair of sharp scissors; but care must be taken not to cut too far as it would cause the toe to bleed. Too-deep cutting can be avoided by holding the bird up between you and the light whilst you are operating.

CAPPING A HIVE (*N. G.*).—A cap may be put on about three weeks after the swarm was given, and the bees are likely to take possession of it more readily if furnished with guide combs.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 11—17, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
11	Th	Meetings of Royal and Zoological Soc.	71.7	47.6	59.7	13	46	af 3	13	af 8	1	af 0	36	af 9	20	0 37	163
12	F		70.7	46.0	58.4	20	46	3	13	8	1	af 0	41	10	21	0 25	164
13	S	Royal Horticultural Society, Promenade.	71.7	47.7	59.7	20	45	3	14	8	26	0	45	11	22	0 12	165
14	SUN	1 SUNDAY AFTER TRINITY.	72.4	48.1	60.3	19	45	3	14	8	50	0	after.		23	before	166
15	M	[and Pelargonium Show, & Com. Meets.	72.9	48.3	60.6	18	45	3	15	8	10	1	0	2	24	0 13	167
16	Tu	Rl. Horticultural Society, Special Prize	72.6	49.3	61.0	18	45	3	15	8	35	1	9	3	25	0 26	168
17	W	Royal Botanic Society's Show opens.	72.8	48.1	60.4	23	45	3	16	8	2	2	23	4	26	0 39	169

From observations taken near London during the last forty-one years, the average day temperature of the week is 72.1°; and its night temperature 47.9°. The greatest heat was 90°, on the 13th and 14th, 1842; and the lowest cold 30°, on the 11th, 1865; and 15th, 1850. The greatest fall of rain was 0.80 inch.

THE COMMON LAUREL AND ITS HARDINESS.

THAT the poetic associations attached to some plants have much to do with their popularity there can be no question, especially when the object selected is of itself worthy of all that is said in its favour. Thus it almost amounts to sedition to whisper anything against Roses, Forget-me-nots, Water Lilies, the wild Primrose, and others: all these plants possess merits of their own sufficient to establish a reputation apart from the ideal qualities often ascribed to them. Some other plants are less fortunate, their title to the honours attached to their names not being clearly made out. The national badge of the Sister Island, the Shamrock, is, notwithstanding all the inquiries that have been made about it, not by any means clearly identified; while a still greater doubt seems to exist whether the plant which forms the subject of the present article is at all entitled to the name it bears: the Laurel of olden times being supposed to be a different plant from the one now commonly called by that name, and I imagine it is vain to look for any authority to contradict or verify the correctness of the appellation.

As my purpose is to refer to cultural matters rather than to open a discussion on terms employed many centuries ago, I will not offer any opinion whether the Sweet Bay, the Laurustinus, Alaternus, or Phillyrea formed the type employed by the Greek sculptors, or whether it was the common Laurel of the present time which was represented by them. Certainly appearances are against the latter view, but it is enough that the present name has been adopted by all, and no one is ever mistaken when the term common Laurel is made use of. Nevertheless, a few years ago we were told that a superior variety of this species had found its way amongst us, to which the title of Colchian Laurel was given, and which, if really different from the former, rendered the name "common Laurel" more necessary than before. Now, as I have not had much experience with this new Laurel, and have some doubts whether the specimens I have met with are correct, I should like to hear the opinion of those who have grown this Laurel, and more especially how it deported itself in 1867 in places where the common Laurel suffered so much. An advantage which it was said to possess over the common Laurel was extreme hardiness: and as the latter plant certainly succumbed to the cold in many places, the greater merit is due to the Colchian Laurel if it passed through the frosty ordeal unscathed; but if not, its other merits, if superior to those of the common Laurel, ought to be told, or if it be merely the same plant slightly altered by circumstances likely to pass away soon, then let that be known also; in fact, anything bearing on the matter deserves to be made known, whether in favour of the Colchian or of the common Laurel.

I am the more anxious to hear of the hardiness and general character of this new Laurel (if it is a new one), from the fact of having witnessed so much damage done to

the old kind in so many places. Great were the lamentations at the losses sustained in this way, even in England, by the frost of January, 1867; in many instances large belts of this shrub 20 feet high were killed to the ground, or within a foot of it, and though most, if not all, of the subjects so killed down have grown again, the shoots in many cases show unmistakeably that the plants have been very much weakened.

My attention was called to the condition of the shrubberies at a place that previous to January, 1867, exhibited the highest possible luxuriance. The common Laurels with limbs almost approaching timber-size, had been so seriously hurt by the frost that the tops were all dead, and only a few of the stoutest stems showed signs of life for perhaps 4 or 5 feet up, and it was only a few of them, the tops from 6 inches from the surface being in most cases dead. Some had been cut down to the ground, some partly cut in, and others not cut at all, and in most cases fresh shoots were rising from the collar, but not so satisfactorily as could be desired. Doubtless the injury inflicted by the frost affected the after-growth, as it is reasonable to suppose that if the same plants had been cut down in a moderately mild winter the after-growth would have been much better than it was after cutting down the top that had been killed by the frost; but this is not the question that was asked at the time, which was this—Ought Laurels so injured to be cut down at once or not? My previous views were certainly in favour of letting them alone, and I am not exactly convinced that I was wrong; but there were some examples where a good result had followed cutting entirely down early in the spring. Now, who is right? In my own practice I let everything hurt by the frost remain untouched as long as possible when their appearance could be endured, and I have not seen any reason to regret it. The damage done here by frost even in 1867 was trifling compared to what it was in many places, so that I have not had the opportunities which others had of finding out the best way of recovering a frostbitten tree or shrub. My own opinion was certainly in favour of letting the plants alone as long as possible, while my friend the gardener was of a contrary opinion.

This subject in relation to Pinuses has, I believe, been discussed in the pages of this Journal, and in that case I certainly advised the scorched and fox-coloured foliage and branches to be let alone, and where this has been done much benefit has resulted. Whether the same treatment may be proper for Laurels and other evergreens not of a resinous nature is a question I should like to see taken up, as well as what is known with regard to the Colchian Laurel; for if additional hardiness could be imparted to so graceful and valuable a shrub as the Laurel, that result would be a boon to the ornamental planter, and especially to those living in parts of the country where the common kind is scarcely hardy enough to withstand ordinary winters, and make the desired progress.

As it is, the Laurel is more extensively planted than any other shrub, and for quickly producing an effective feature it cannot well be surpassed; but where it has been planted

to screen some unsightly object, and has answered the purpose for some years, it is very annoying to find some spring that the winter frost has killed it to the ground, and the object it was intended to hide is fully exposed to sight. If the Colechian Laurel will exempt us from such a misfortune it will be of no small value, and even those who in consequence of their favoured position may not require it, would be glad to make use of it, lest a more intense frost than that of January, 1867, should occur, or a repetition of it in places not affected at that time should make all sufferers.—J. ROBSON.

STRAWBERRY FLOWERS SCORCHED.

STRAWBERRY blossom has been unusually beautiful and abundant this season, giving promise of an enormous yield of that most estimable fruit. The weather has been all that could be desired for the setting of the flowers; warm, with bright sunshine; no sharp frosts as in the case of last year, when they destroyed nearly all the expanded blossoms, leaving us but a partial crop. This season we have suffered to the same extent from the opposite extreme—too much heat. On Tuesday, the 19th ult., the thermometer in the shade registered 87°, in the sun it actually rose to 147°; extremely high temperatures for this season, higher than are experienced during the whole course of some years.

I have been taking notes of the various forms, &c., of Strawberry flowers this season. On the evening of the 18th of May every bud, open flower, and fruit was perfect; next evening I found them scorched up and withered, as you will observe by the enclosed example. This is not a solitary instance, but is general all over the garden; every flower that was open, and very many of those in the bud, being destroyed. This result could have arisen from no other cause than the extreme heat of the sun, helped, no doubt, by the great dryness of the soil. The plants, I imagine, must have flagged considerably, although I did not observe them so affected, and suffered in consequence, as frequently happens with forced plants.

From the great abundance of blossoms on the plants, there will, I infer, be no actual loss of crop, as there were far too many flowers for the plants ever to bring to perfection; indeed, the flowers that are destroyed are just those that in forced pot plants are always cut off by good cultivators to allow of the better development of those remaining. Nature herself has here done what we seldom or ever think of doing with our open-air Strawberries, and that is to thin the blossoms when superabundant, so as to allow a better means of development for those that are left. It is from such lessons as these that we gain knowledge and experience.—A. B.

NEW ROSES.

I HAVE just flowered one of the new Roses, which I think promises to be a beauty. It is Mademoiselle Marie Larpin. It is of a pale flesh colour, deeper in the centre, somewhat of the colour of Caroline de Sansal, of exquisite shape, and good constitution. I shall watch its future flowering carefully. I have since bloomed La France, which fully justifies all my anticipations. It promises to be the premier Rose of the season; large in size, quite distinct, and with a most delicious perfume. How wonderfully early Roses are this year! and how wisely the Crystal Palace Company have acted in fixing their exhibition for June 20th! and how valuable a stock the Manetti is I have proved this year. I did not move mine until March, and yet they are now blooming very vigorously, whereas had they been on Briars they would have most likely perished.—D., Deal.

POTTING ORCHARD-HOUSE TREES.

In page 394 it is recommended that the collar of potted trees be kept high in order that water may not lodge there. Is not this contrary to the practice at Sawbridge-orth? There you see the top-dressing piled up round the pot, so as to leave a depression in the centre. I am perfectly aware that, as a general rule, trees should be planted high and dry, but potted trees in orchard houses are placed in exceptional circumstances. In the autumnal top-dressing the ball is left from year to year undisturbed, while round the edges of the pot new soil is placed. This new soil, until it becomes filled with new roots, is liable to turn sour if overwatered, while the central ball remains a hard dry mass. Again, the action of the sun upon the sides of the pot has a tendency to cause the

earth to shrink, and allow water to run off at the circumference. To counteract this last difficulty I have had many pots painted, first with linseed oil, and then with a coat of oil paint, so as to diminish evaporation; but the effect is only partial, and I still adhere to the plan of watering as near the centre of the pots as possible.—G. S.

[Quite the reverse of our recommendation. On the other hand, the potting-high of hair-rooted plants might never have been so general if the waterer had kept the water from dashing against the collar of the plant. Every man to his taste. You prefer a hole in the centre, we do not for reasons given. Even on your own premises—the earth shrinking from the circumference of the pot—we see a reason against your plan for pouring the water in the centre. We have no notion of a space between the ball and the pot.]

INSECTS.

(Continued from page 409.)

THRIPS, continued.—As there are plants which cannot safely be syringed with soft-soap solutions after fumigation, as I have recommended in page 408, a thorough syringing with pure water should be given to such twice or thrice a week for a fortnight or three weeks, after which all danger from the eggs will be past. Should the syringings, however, not keep the insect in check—indeed, should one appear, fumigate the house, and this repeatedly whenever a thrips is perceived; for when once established they are difficult to drive away, as though the original insects may be destroyed, they leave so many of their progeny behind that some time must elapse before they can be completely destroyed: hence the necessity for exerting great vigilance, and taking prompt measures to destroy the insect.

It may seem a wasteful proceeding to fumigate a house for the sake of one thrips. Without wishing to be considered extravagant, I submit that there is no economy in proceeding against such pests as this by half-measures. The means must be thorough, effectual, and the best mode of prevention is to treat a clean plant as if it were infested. There may be seasons when the attacks are not likely to be general; then the plant attacked may be treated singly, fumigated by covering it with canvas, or by placing it along with others in a small house, or if the plant will endure syringing with the soft-soap solution, that alone will be effectual, the plant being removed from the house for the purpose. A few thorough syringings will in most cases prove a good remedy in autumn and winter, though it is well even then to fumigate or dust the plants on the under sides of the leaves with tobacco powder, which is, perhaps, the best way of clearing individual plants, sprinkling them beforehand with water. The plants dusted should have a thorough syringing within twelve hours, and if delicate, as Ferns, the powder should be washed off again within six hours. The tobacco powder is also a good remedy for thrips on Melons, but is difficult to apply, as it is of no avail unless put on the under sides of the leaves, and that is difficult enough with plants in frames.

Melons are rather impatient of fumigation with tobacco. No harm, however, results to the leaves if the smoke be delivered cool, the foliage be dry, and a moist atmosphere be preserved during the following day, along with shade from bright sun. It is well to fumigate on two consecutive evenings, rather than to give one powerful dose that may destroy the crop. The same remarks apply to Ferns. They will not endure very powerful fumigation, hence care must be taken not to overdo it, and to have their fronds dry; but as they cannot subsist in a dry atmosphere every surface may be sprinkled with water prior to fumigation, so far as it can be done without wetting the fronds.

Avoid the use of soap solutions with Ferns, Melons, and similar-leaved plants; it is a certain means of rendering them black, and destroying them. Much may be done towards freeing plants of thrips by, in the case of Ferns, washing them with water by means of a sponge; and any large-leaved plants—that is, such as have smooth glossy leaves, may in the same manner be sponged with a soft-soap solution, at the rate of 2 ozs. to the gallon; but after some experience, I am convinced there will not be two opinions as to what is the best material, and the best means of applying it for the destruction of thrips—viz., tobacco smoke.

Plants in the open air are sometimes attacked with thrips. In that case make an infusion of 2 ozs. of tobacco in a quart of boiling water, and allow it to stand until cool, then strain, and add one gallon of the soft-soap solution (2 ozs. to the gallon).

With this syringe the plants, or dip them in it, and repeat the application if necessary, syringing the plants every evening in dry weather, and adopting other means calculated to insure healthy free growth.

Water as already stated being a natural enemy of thrips, the plants should be well syringed when making new growths, and afterwards, when these are mature, a good syringing occasionally will do good, and the temperature ought to be kept as low as is consistent with the health of the plants. It is the maintaining a dry, hot, close atmosphere that encourages thrips to take a hold on plants, and the way to escape its ravages is to give abundance of air, to keep the atmosphere cooler at night than by day, and to afford moisture plentifully.—G. ABBEY.

(To be continued.)

THE JUDGING AT THE ROYAL HORTICULTURAL SOCIETY'S SHOW.

THE Council of this Society does not seem to have made a very happy selection of Judges for the late Exhibition. One very glaring mistake was made in judging Variegated Zonal Pelargoniums; and I am sure one of the gentlemen selected to act as a Judge in this particular class is well qualified to fill such a position without fear or favour; but what was Mr. Grieve to do if he was opposed in his judgment by two others acting with him who were unfit, and incapable of distinguishing the difference between a Variegated Pelargonium and what is called a Variegated Zonal Pelargonium? The class to which I allude is intended for Variegated Zonals, and the schedule distinctly states, for "six Variegated Zonal Pelargoniums."

In the first place I would ask, Of what use is it for the Royal Horticultural or any other Society to print and distribute a schedule inviting exhibitors to attend the exhibitions, if the Judges appointed will not act according to the instructions set before them in the schedules?

In the class for Variegated Zonal Pelargoniums there were four collections exhibited, two of which ought most certainly to have been disqualified. A first prize was justly awarded to Messrs. F. & A. Smith, of Dulwich, whose plants were staged in a very neat way, were very even and compact, and, above all, every plant was a Variegated Zonal Pelargonium. Mr. Turner's collection ought to have been disqualified, instead of having an equal first prize with Messrs. Smith's, for this reason—one of the plants (May Queen), shown in his collection was not a Variegated Zonal. No trace of a zone can be seen in it. In Mr. W. Paul's collection there was also a kind named Snowdrop zoneless. This will show that only two collections were worthy of any award, and in justice to the other exhibitors the Council ought at once to publicly announce that it has rescinded the awards of the Judges, and that in the class for Variegated Zonal Pelargoniums only one first and one second prize will be given—namely, the first to Messrs. Smith, of Dulwich, and the second to Mr. J. Janes, the other two collections being disqualified.

The following is the order in which the plants were exhibited:—

Messrs. F. & A. Smith had Sunray, a fine Tricolor, in the way of Lady Cullum; Exquisite, a pretty Silver Tricolor, like Italia Unita; Miss Burdett Coutts, a handsome Silver Tricolor, and a decided improvement on Italia Unita; L'Empereur, a variety very much like Sophia Dumaresque; Metzer, very much like Mrs. Pollock, certainly little if any improvement on that variety; and Banshee, another Silver Tricolor, which appears to be a very finely improved form of Burning Bush. The above, were, however, well grown, the plants very even in size, and nicely got up.

Mr. C. Turner exhibited in his collection May Queen, a white-variegated Pelargonium, very much like Bijou, having no zone; Lady of Shallot, like the Countess, Silver Tricolor, having a faint pink zone; Princess of Wales, Silver Tricolor, very much like Italia Unita; Lady Cullum, one of our very best Tricolors, but the plant exhibited was a small one and looked quite lost by the side of Mrs. Turner, which is so much like it that it would puzzle almost the best judge in England to tell the two apart if the labels were removed; Mrs. Turner; and Sophia Dumaresque, also like Lady Cullum.

Mr. W. Paul exhibited two plants of his distinct and pretty Prince Silverwings, a mixed Silver and Gold Tricolor, and likely to make a very handsome bedding plant. The habit is very compact, and the style of growth neat and vigorous; Snowdrop, very much like Mountain of Light, a variety having

no zone; Plutarch, a fine Golden Zonal, having a fine, hold, and vigorous style of growth, with good flat leaves, very much like Florence; two plants of Louisa Smith. These, however, had very little colour, and did not appear to be any improvement on Mrs. Pollock.

Mr. J. Janes's collection, which should have been placed second, contained the finest and best-grown plant of Lady Cullum I have ever seen exhibited. It was a glorious mass of colour. Italia Unita was also a fine plant and beautifully grown, and if the other four had been better varieties, equal in size, and as well grown, they would have been the finest six Tricolors ever exhibited. I would advise Mr. Janes to procure four of the varieties shown in the preceding collection and present them in the fine style in which Lady Cullum and Italia Unita appeared in the dull and gloomy arcades (which are very little better than the dark arches of the Adelphi for exhibiting plants in), and I will undertake to say he will carry all before him. The other four shown in his collection were badly grown, and varieties possessing no merit. They were—Amy, no better than a badly-grown Mrs. Pollock; Beauty of Guestwick, Mrs. Benyon, and Little Pet, having a small and crumpled leaf. It is to be hoped that the Council will act more wisely in the selection of the Judges on the occasion of the Special Pelargonium Show which is shortly to take place.

In conclusion, I would suggest to the Floral Committee of the Royal Horticultural Society the propriety of affixing all their awards, properly describing the objects that have been awarded certificates, on the various plants before the public are admitted to see them. At the late Show I noticed a great array of certificates on plants on the third morning after the Exhibition was opened that were not on them the first nor the second day of the Show. To the names of the plants was simply added the inscription, "First-class certificate." This is a practice likely to mislead the public. It is highly important that the Society should publish a proper list of the awards given on the first day of the Exhibition. A Society like the Royal Horticultural of England should not show more favour to one exhibitor than to another. If this is not sufficiently intelligible to the Floral Committee, I shall be glad to have an opportunity of explaining my meaning more fully.—J. W.

PLANTS IN FLOWER IN MAY.

ACKLAM HALL, MIDDLESBROUGH-ON-TEES.

May 4,	<i>Prænia tenuifolia</i>	May 18,	<i>Sorbus aucuparia</i>
	<i>Iberis sempervirens</i>		<i>Fraxinus excelsior</i>
	<i>Spartium scoparium</i>		<i>Quercus robur</i>
	<i>Sambucus nigra variegata</i>		<i>ceris</i>
	<i>Kerria japonica</i>		<i>Acer pseudo-platanus</i>
	<i>Myrica gale</i>		<i>Potamo officinalis</i>
	<i>Euonymus europæus</i>		<i>Acer campestre</i>
	<i>Prunus padus</i>		<i>Crataegus laciniata</i>
	<i>Laurels</i>		<i>pruinifolia</i>
„ 9,	<i>Convallaria majalis</i>	„ 21,	<i>Juncus</i>
	<i>multiflora</i>		<i>Polemoniumeruleum</i>
	<i>Euphorbia cyparissias</i>		<i>Richardsoni</i>
	<i>Laurustinus</i>		<i>Aquilegia vulgaris</i>
	<i>Fritillaria meleagris</i>		<i>Lindlora</i>
	<i>Rhodiola rosea</i>		<i>Skinneri</i>
	<i>Asperula odorata</i>		<i>Weigela rosea</i>
„ 12,	<i>Red and Black Currant</i>	„ 23,	<i>Ilex scotica</i>
	<i>Crataegus oxyacantha</i>		<i>Cytisus capitatus</i>
	<i>Viola tricolor</i>		<i>Mespilus germanica</i>
„ 15,	<i>Centaurea montana</i>		<i>Æsculus rubicunda</i>
	<i>Pyrus chama-mespilus</i>	„ 27,	<i>Perpetua mucronata</i>
	<i>Orchis morio</i>		<i>Kalmia glauca</i>
	<i>Brompton Stocks</i>		<i>Ilex lucida</i>
	<i>Saxifraga umbrosa</i>		<i>Crataegus coccinea</i>
	<i>rotundifolia</i>		<i>Laburnum</i>
	<i>dentata</i>		<i>Pæonia moutan</i>
	<i>granulata plena</i>		<i>Cornus sanguinea</i>
	<i>Andrewsii</i>		<i>Cotonaster affinis</i>
	<i>Coronilla emerus</i>		<i>Viburnum lantana</i>
	<i>Cerastium tomentosum</i>	„ 29,	<i>Tilia gesneriana, var.</i>
	<i>Dodecatheon meadia</i>		<i>Trollius europæus</i>
	<i>Viola canina</i>		<i>Primula fruticosa</i>
	<i>Nemophila insignis</i>		<i>Rhododendron ponticum</i>
	<i>Hyacinthus non-scriptus</i>		<i>Veronica gentianoides</i>
	<i>nutans</i>		<i>Camassia esculenta</i>
„ 18,	<i>Azalea pontica</i>		<i>Triteleia uniflora</i>
	<i>Andromeda axillaris</i>		<i>Ajuga reptans alba</i>

—M. H., Acklam Hall.

FRUITING OF THE ROSE APPLE.

THERE appears to be some error respecting the first individual who fruited the Rose Apple (*Eugenia jambos*), in this country. Neither Mr. Carr nor Mr. Mundell can claim the credit, and I cannot say with certainty who can. Mr. Vair had

the above-mentioned plant in fruit at Dangstein eight or nine years ago, and he says that Mr. Scott, of whom he received the cuttings, fruited it before that time in the gardens at Leigh Park, near Havant, Hants.—GEORGE NEWLYN.

STRAWBERRIES FROM PREVIOUS YEAR'S RUNNERS.

"FRUIT EATER" in his list of about forty kinds of Strawberries taken from the previous year's runners, and stating what proportion of them was then in bloom, omitted two kinds, which, from my experience, I should place amongst the best of our early Strawberries; I refer to Oscar and Eclipse.

I took three or four hundred runners of the above last autumn, merely removing them with a trowel from the bed where they had rooted, and ninety-nine out of every hundred have not only bloomed, but fruited, and most of them very heavily (some from forty to fifty berries, and very large), and I gathered a very nice dish of ripe fruit from Oscar on the 26th of May, and a dish from Eclipse the next day.

My soil is similar to that described by "FRUIT EATER."—J. D., *Sneyd Park*.

EARLY PEAS.—SUTTON'S RINGLEADER.

THE introduction of a new early Pea is not an event calculated to cause any great commotion in the gardening world, as very few seasons pass without one or more being brought forward, many of them being, as the Irish sergeant would have it, "an advance backwards," and some are only slight variations of old sorts. Indeed, so comparatively small has been the progress made during the last dozen years, that if the earliest sort previous to that date be sown side by side with the very earliest we now have there will not be much more than ten days between them.

These ten days earlier, however, are a great matter, and the only Pea which can perform that feat, with me at least, is Sutton's Ringleader, one which will, there is little doubt, become the parent of many better and still earlier varieties, and head a new chapter in Pea lore. From rows of it sown in the first week in February, I am now (June 1st), gathering well-filled pods, which is early for this cold humid part of the country, whilst a single row of Dillistone's Early and four of Sangster's No. 1 are only just beginning to fill the pods, although all were sown at the same time and on the same border. The last two sorts will, however, produce much heavier crops, and continue longer in bearing, as Ringleader, when grown on light soils, ceases flowering soon after the first pods begin to fill.

One circumstance in connection with this variety may be worth mentioning. As is well known, it is still somewhat high in price, resulting, no doubt, from the great demand for it during the last three seasons, so last year I managed to save about a pint of seed, which was sown along with those we are now gathering from, and the difference between the two lots is most marked, those from the home-saved seed being more than 6 inches taller, greener, and in every way more robust, and also four or five days later. This I am at a loss to account for, as it goes quite against all my other notions—they may, perhaps, be nothing more—about change of soil being beneficial to most crops. In the case of Potatoes, which for farm purposes we frequently exchange for others from a distance, and from different soils, it most undoubtedly is beneficial, and acting under the same impression I have procured Strawberry runners from a distance, instead of using those from plants which had been long grown in the same garden. Can the difference between the Peas be the result of wholesale crossing with some other sort in flower at the same time? or can the fact of the other seed having been grown in a sunnier, drier climate influence the habit in the succeeding year?—AVONSHIRE GARDENER.

NEGLECTED HARDY ORCHIDS.

I AM much pleased to see that some of your readers are at last paying attention to neglected border flowers. I should like to recommend to them the cultivation of the Hardy Orchids. As I grow about thirty species in the open borders, I can say from experience that there are few flowers more interesting, more ornamental, or more easy of cultivation. I have had this year *Cypripedium pubescens* with nearly fifty flowers on one plant, *C. calceolus* with nearly twenty flowers, and I have now in flower a good clump of *C. spectabile* with flower stems

nearly 2 feet high, and the flowers more than 3 inches across. These require peat soil, but I find that all the rest will grow almost anywhere. The common *Orchis mascula* is a handsome plant to dot about a spring border, and I know few flowers more ornamental than *O. maculata* well grown. The whole family does well in rockwork, where the roots are shaded, but the flowers can come up into full light and air. In such a place I find no difficulty in growing even the Marsh Orchids, such as *Epipactis palustris* and *Liparis Loeselii*. The only difficulty is in first establishing them, some of them being rather impatient of removal, but when once established and left undisturbed, they grow without any difficulty.—H. N. E., *Bitton Vicarage*.

VISITS TO GARDENS PUBLIC AND PRIVATE.

ARCHDEACON CROFT'S, SALTWOOD, NEAR HYTHE.

ON (so say the meteorologists), the hottest day in May that we have had since 1833, in company with some friends who were staying at the "Pavilion," Folkestone, I drove to see the grounds of the Venerable Archdeacon Croft, more especially The Alders, as they are locally called, although it might be better named the Rhododendron Valley. The drive was broiling, the dust was tremendous, but the treat at the end amply repaid all; and I came away with the feeling that the impression it made upon me some fifteen years ago—that it was one of the choicest pieces of landscape gardening I had ever seen—was in no way diminished by this sight of the place after so many years. It is just one of those places which it is impossible to describe, for words cannot, any more than drawing, set before us the varied beauties of such a spot; yet I would fain give some notion of it, so that if in another spring time any of the readers of the Journal should be in the neighbourhood, they may enjoy such a sight as they will not find in many places.

We sometimes hear of the Rhododendrons in such a place being so beautiful, but when we go there we find simply a mass of the commoner kinds which have obtained a congenial home and grown vigorously; but the case is entirely different with this beautiful spot. It was originally, thirty years ago or more, nothing more than a deep fissure, something like a railway cutting; and it has been transformed into its present beautiful condition by the taste and skill of Mr. Acomb, the gardener, and the liberality of the Archdeacon, the former enjoying the rare happiness of seeing the child which he had thus cradled growing up to its full perfection, the admired of all comers. This deep fissure has, then, been widened out; small pieces of water have been formed; and the most judicious and careful planting of Conifers, Rhododendrons, Azaleas, Kalmias, &c., has been made. Here you come upon a view, in the foreground of which is a fine plant of *Arancaria imbricata*, close to it a noble Rhododendron, and in the background some lovely plants of *Azalea indica alba*. On seeing these with their clear beautiful foliage and their profuse bloom, I could not but compare them with the tortured crinolines, and pyramids, and umbrellas that one has seen at exhibitions at home and abroad, and could only say, "*O! si sic omnia!*" And why should they not be? This over-training is a mistake; and I believe ninety-nine persons out of a hundred would prefer the more natural growth. But to return to the garden. These Azaleas have withstood 20° of frost before now; and this only shows how hardy they are, and causes one to wonder at the way in which they are tortured and coddled in private collections at times. Now we take another turn, and masses of the orange-coloured Ghent varieties and Rhododendrons meet the eye. Here, again, Ferns luxuriate in all their gracefulness, and now a huge tree of *Kalmia* unfolds its sunny blossoms; and so at every fresh step fresh beauties break in upon your view, and, if you be curious in such matters, new varieties unfold their blossoms for you. The Sikkim species flourish here, but as they bloom earlier than the other kinds, they were out of flower before my visit was paid.

Among the wonders of the place I may mention that *Camellias* grow here in the open air with only a slight thatching of the Brake Fern in winter. The size of some of the plants of Rhododendrons is very large, showing how thoroughly their treatment agrees with them. One in particular covers a very large space, and was much larger—I forget exactly the dimensions; but it was greatly injured by a severe snowstorm two winters ago, which broke the head out of it. The Archdeacon grudged no money to add to this beautiful collection; but I was struck by what his gardener said on this point—viz., that he used at one time to go up to London to visit the exhibitions

of Azaleas, &c., and was frequently tempted to buy some that he saw under canvas, but that when he obtained them and flowered them in the open air, there was very little if any improvement on the older kinds; and so, although you may find many of the newer varieties here, yet the older and better-known kinds are the most relied on. After all, it is not so much the individual plants as the judicious massing that makes the charm of this garden; and I venture to say that no one who takes my advice and visits this garden will be disappointed, but, on the contrary, will say that I have given a very poor idea of its unique beauty.—D., *Deal*.

OUR WILD PLANTS ON THE ROOF OF A LONDON RESIDENCE.

WHEN in the west end of London the other day I saw what I think you may be interested to know. I was staying at the house of a lady who is fond of Ferns, and who, in summers' outings in Scotland and Westmoreland, had collected some plants to form, if possible, an oasis in the desert of town life, and thought, and truly, that her success had been great. On the leads, without any shelter, or any care beyond that which ladies know so well how to give, I saw amongst many others two healthy plants of *Osmunda*, a fair *Allosorus crispus*, and, what astonished me more, a very fine plant of the Grass of Parnassus. You may judge how often such a sight has refreshed the owner, who, though an ardent lover of the country, is necessitated to live in town.—W. STOKES SHAW.

NOTES ON THE MANCHESTER HORTICULTURAL EXHIBITION.

THE demand for building sites has hemmed-in not only the London parks but similar places near other large towns, often much to the detriment of the trees, shrubs, and other plants there cultivated. So it has been with the Manchester Botanic Garden; for although it might at one time have been comparatively clear of the smoke and dirt inseparable from a large manufacturing city, the increase of trade is, of course, attended with a corresponding augmentation of all the evils which affect vegetation. Factories and dwelling houses rise up where smiling meadows and corn fields once refreshed the eye; long lines of streets and lofty manufactories vomit from their chimneys that black smoke which taints everything it comes in contact with. This state of things is by no means confined to the Manchester Botanic Garden, nor can it be well avoided, for to remove such a garden to what may be called a safe distance, would be to deprive so many of its use that the remedy would be as objectionable as the evil. Considering the evil, therefore, as one which could not be avoided, I was pleased to find on the late as well as on a former occasion when I visited this garden, that the plants under the care of the able Curator and his assistants were very well grown, although the trees and shrubs showed unmistakable tokens that all hopes of their attaining their proper proportions were out of the question. Soot, thick almost as the bark that encases them, formed an outer covering excluding all access of air, and giving that gloomy appearance to the whole which the spectator from a more healthy district sees more readily than those who are accustomed to a smoky atmosphere. To contend against this is extremely difficult, and can only be done successfully in the case of subjects whose existence is short, or which are immediately under the care and control of the cultivator—in other words, only plants cultivated under glass, or which occupy the flower beds during the summer. No doubt these would do better if they were in a more healthy neighbourhood; but as it is, those in the Manchester Botanic Garden are creditable, and many of those under glass are well-grown specimens, showing that much care and skill had been exercised in their management.

The Botanic Garden of the great metropolis of the cotton trade occupies a nearly level position on the south side of the town. The country, it may be remarked, is level for several miles round, not so dead a level as those alluvial lands known as fens or marshes in other parts of the kingdom, but destitute of any great elevation. The soil is of a black, sandy nature, evidently well adapted for the *Rhododendron* and *Potato* were the atmosphere more pure; and many other plants would thrive well in the garden were it not for its proximity to chimneys. The entrance is a fitting one, with

suitable offices adjoining it; and, partially concealed by trees, to the left is the range of houses for plants, while to the right is the large conservatory which, like that at Kensington, is more used as a receptacle for plants exhibited at the various shows than for those grown in it. Indeed, the building, I believe, was designed solely to hold the horticultural shows in; but shows, like other things, outgrow their original dimensions, and additional space was, in the case of the recent exhibition, obtained by uniting the exhibition building to a large tent, or rather a series of tents. In one of the principal of these the ground is thrown up into a series of terraces and turfed over so as to form stages for the plants, instead of the latter being placed on the too-common wooden tables covered with green baize. Other tents adjoining were devoted to cut flowers and some special purposes, but the bulk of the flowering plants (*Pelargoniums*, *Calceolarias*, and *Fuchsias* excepted), were in the exhibition building and the tent with the turf banks. A sort of elevated platform where the two united gave the visitor a good view of both.

I now come to the subjects of exhibition, and in the first place may say that most of the stove plants, *Orchids*, and other tender plants were placed in the permanent building, and the more hardy ones under canvas. The arrangement of the former was necessarily confined by the nature of the building, and as a whole did not look so well as the latter, many of the plants being at so great a distance from the observer. The house was divided longitudinally, and the plants staged against the two sides, with a large space for a path in the centre. Most likely it would be difficult to arrange the plants otherwise; but if it could have been done so as to have placed some of the plants that were 12 or 15 feet from the spectator somewhat nearer, it would have been better. As it was, those at the back were only imperfectly seen, and the groups were not so well defined as at some other exhibitions; nevertheless, the general effect was good.

Many of the plants were very large, and those from the garden of H. Micholls, Esq., of Bowden, and from Messrs. Cole, nurserymen, Manchester, were excellent specimens of cultivation. Not less so were those of other cultivators, who showed them in smaller numbers. An important prize for a group of plants deserves to be more generally adopted by the managers of exhibitions; it was one for ten plants in flower and ten fine-foliaged plants. The combining of the two in one group had a good effect, and deserves to be repeated at most shows of a like kind; only where such combinations are made it is certainly advisable to exclude the mathematically trained *Azaleas* and other plants, which present too rigid and formal an outline to keep company with those having graceful and flowing foliage. There can be no objection to *Azaleas* and similar plants forming part of the group, but it is certainly bad taste to introduce those which are stiffly trained; and if the latter had showed less conspicuously that they were indebted to wires, sticks, and strings for the form they appeared in I would have liked them much better—in fact, I am not sure but that the whole would have been better without being trained at all if they could have been brought to the Show, but this is more difficult to do than with a stiff-trained plant. In the mixed group stiff training ought to be excluded.

Pelargoniums of the Show and Fancy varieties were less numerous and hardly so well managed as I have seen them at some of the London shows; but the *Calceolarias* were good, and there were several groups or collections of the now popular *Tricolor Pelargoniums*, including most of the varieties already known to the gardening world, and several new ones. A large collection of seedlings from some one whose name I failed to find out, promised to be very fine. Other novelties there were, amongst which I noticed a collection of *Coleuses* from Messrs. Veitch, which I was told were those recently purchased from the Royal Horticultural Society. Of the merit of these it may yet be premature to give an opinion; but unless the after-foliage improve in appearance there seems really little to admire in them.

Cut flowers were but sparingly exhibited, and I missed the baskets of cut flowers which I have seen elsewhere. Hand bouquets of the usual type were numerous, and the prize wreaths for the head were the prettiest I have seen. The bridal bouquet was also well arranged. Maiden-hair Fern formed a portion of almost all the bouquets exhibited.

A tent devoted to the Tulip was very sparingly occupied, and the merits of those exhibited might have been better understood some forty or fifty years ago than now. As it was, the general public paid them little attention.

Fruit was good, but less in quantity than might have been expected in a locality where it is so well grown as in Lancashire, besides which, the liberal prizes offered might have tempted exhibitors from a distance as well. The prize Pine was from Hertfordshire, and it well deserved the distinction it received. A Queen of 6lbs. in May is not a fruit often to be met with; but it may be as well to remark here, that the Pine chiefly grown in this part of England is the Jamaica, just as the Cayenne is in Scotland, and the Queen around London. Black Grapes were good, but the white ones were, perhaps, hardly ripe, and the collection of four kinds was far from being good. Strawberries were not remarkable, it being too early for the out-door fruit, and perhaps those grown under glass were becoming scarce.

Of other subjects exhibited, there were numerous examples of boilers, one or more with a quantity of piping being at work. Some of the boilers were not intended to be encased in brick-work, but to stand open. Economy in fuel was also one of the features aimed at. The friends of the tubular boiler are certainly fewer than they were some years ago, but I expect further improvement in the saddle boiler, some of those exhibited being of a sort intermediate between that and the conical. Amongst the boilers exhibited some were very useful, and it is certainly important that such should be made known at exhibitions. Although not connected with horticultural heating, I noticed some ingeniously-contrived chimney tops to cure smoky chimneys. One with a revolving top was so contrived that its spindle turned a sort of winged screw, not unlike in construction the wings of the screw propeller of a steamboat; to appearance this must pump up, as it were, the air in the chimney, and so long as it keeps in motion one might expect exemption from smoke. There were also some modifications of this screw, some of the wings being nearly of a cup form. I was not surprised at the attention paid to this contrivance, evidently by those who were sufferers from smoky chimneys.

Garden seats were exhibited in great variety, also mowing machines of all sizes, syringes, tools, and implements of all kinds; but one of the most common of all was here, as it generally is on all similar occasions, conspicuous by its absence; for, notwithstanding the improvements every article has been subjected to, we never see nor hear of a wheelbarrow at such exhibitions, and nothing in everyday use is more in need of improvement. A neat handy barrow for garden use is one of the rarities one meets with only once or twice in a lifetime, and I am not sure that I have ever done so yet.

The arrangement of the whole Exhibition was admirable, and I hope was duly appreciated by the manufacturing public, of which Manchester is the centre; for the Show was to continue open about a week, the latter days at such a price as to admit the million on the most important holiday week they have in the year—namely, Whitsun week.

A notice of this kind would not be complete without mentioning that the flower beds in the panel garden immediately in front of the Exhibition house were all planted with their summer occupants, consisting of Pelargoniums, Lobelias, Calceolarias, and similar plants; while in a reserve ground behind I noticed a quantity of plants that had evidently been removed thither only a few days, being the "spring gardening" bulbs and plants. The system of having two crops of flowers on the same ground is trying alike to the energy of the cultivator and the qualities of the soil. The latter I expect will be enriched by manure, either liquid or solid, and there is no doubt as the summer advances the display will be good, as the plants were certainly planted thickly enough. Of course a favourable season or otherwise influences everything; but in the moist climate of Lancashire one of the elements of success—rain, will probably not be wanting, as it has been in some districts. All parts of the ground were in good keeping, and the walks being mostly composed of gas tar and crushed Derbyshire spar, or a hard white stone resembling that substance, looked well, and many of the public walks in the district were made in this way, with now and then a dash of crushed brick as well. The mottled appearance such walks present contrasts strongly with the dull brown gravel used elsewhere, and I need hardly add that such walks are always clean. A visit to the great metropolis of the cotton district will reveal much that is useful in this way; but if the traveller be from a favoured rural district in one of the southern counties, he will feel reconciled to its not having the advantages which a manufacturing district possesses, on observing how dwarf, dingy, and unhealthy every shrub or tree appears; while the care, skill, and energy dis-

played in the culture of plants under glass, and the success achieved with them, will convince him that all the skill and dexterity of the dwellers in these districts are not absorbed in mechanical pursuits, for those following the more ancient calling of the gardener are as a body second to none of their brethren in other parts of the kingdom.—J. ROESON.

FERTILISING SHY-SETTING GRAPES.

MUCH has been written upon the setting of Muscat and other shy-setting Grapes; and in THE JOURNAL OF HORTICULTURE of January 30th I read the following paragraph written by Mr. Budd, gardener, Cobham Hall:—"To set the Muscat of Alexandria like the Black Hamburg, keep the day temperature at 75° by fire heat, and 85° with sun heat. Keep the night temperature at 70°. Damp the paths at 7.30 A.M. and at 4 P.M. Keep the whole of the atmosphere of the house in perpetual motion night and day. When the blossoms are fully expanded give each bunch a slight shake once a-day. This is all that is necessary to ensure well-formed bunches."

My experience from having set and fruited our new Grape, Mrs. Pince's Black Muscat, on many occasions in pots, with smaller canes growing for sale, where the atmosphere must as a rule be kept very moist, led me to believe in and adopt Mr. Budd's plan to the very letter. The whole of the vines here have set better this year than I ever saw them. The small house in which Mrs. Pince's Black Muscat is growing is truly a sight worth seeing. The bunches really touch each other; and as I shall have to take off more than half, I send you a part of a bunch, that you may see that every berry has set. I shall be glad to know if others have tried Mr. Budd's plan.—SAMUEL RANDALL, Manager to Lucombe, Pince, & Co., Exeter.

[Nearly every berry was set in the portion of the bunch sent.—EDS.]

CROSS-BREEDING THE POLYANTHUS.

New varieties of the Polyanthus, indeed of all florists' flowers, are raised from seed, and in fertilising them the experimentalist may vary his operations according to his taste, judgment, or requirements. If size be wanted, take Buck's George IV. for the seed-bearing parent, if refinement, Saunderson's Cheshire Favourite, and impregnate them with the pollen from a flower containing such properties in colour or marking as you wish to impart. The *modus operandi* is as follows: Take a strong truss of the variety selected for the purpose; remove the small pips, leaving five or six to be operated upon; take out the anthers with a pair of small forceps or tweezers as each pip opens; when fully expanded collect the pollen from the best pips of the variety selected for that purpose, with a camel-hair pencil that will not scatter it; introduce it into the tube, and forcibly turn it round upon the stamps of the removed anthers; repeat this process several times; cover the truss with the piece of glass mentioned before [see page 375], to keep wet or insects from injuring the fertilised pips, and Nature will work her own way.

When the seed-pods are turned brown, and just about to open, gather them; store them in a dry place until you sow them: the best time for this is probably in February. Fill some boxes, pans, or shallow pots to within 1 inch of the top with rich garden mould, then sift or rub half an inch of very fine soil, and sow the seed; only just cover it with fine-sifted soil, water with a small rose pot, and take care never to let the seeds get dry after they begin to germinate. When the seedlings are large enough to handle, transplant them in a shady border, free from drip, about 3 inches apart; attend to watering and top-dressing, and in due time this labour will be rewarded by the appearance of some "gems of purest ray serene."

I will just mention a method I have adopted as a temporary shade, and I find it well adapted for a sunshade during the summer months. On the back of the short stake in which I fix the piece of glass for protection to the bloom, I hang with a single tack a piece of perforated zinc, about 5 inches by 7; this admits a free circulation of air, and prevents the rays of the sun striking directly upon the plants.—DERA (in *The Gardener*).

CRYSTAL PALACE ROSE SHOW BREAKFAST.—The refreshment contractors promise to provide breakfast at 10 A.M. if they are informed how many are likely to require it at that time. Last

year we could get nothing like a breakfast until twelve o'clock. Will such exhibitors as intend to avail themselves of the contractors' offer kindly drop me a line by the 16th instant? and I will communicate the probable number to the contractors.—
R. B. POSTANS, Brentwood, Essex.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

CYMBIDIUM PENDULUM, var. *ATRO-PURPUREA* (Purple-flowered pendulous Cymbidium).—*Nat. ord.*, Orchidaceæ. *Lin.*, Gynandria Monandria. Native of Java. Flowers purple, green-tipped; lips white, rose-tinged, and purple-blotched. — (*Bot. Mag.*, t. 5710.)

ERANTHEMUM ASPERSUM (Speckled-flowered Eranthemum).—*Nat. ord.*, Acanthaceæ. *Lin.*, Diandria Monogynia. Stove shrub, introduced from Solomon Islands by Messrs. Veitch. Flowers white, blotched and sprinkled with dots of purple. — (*Ibid.*, t. 5711.)

OPHRYS INSECTIFERA, var. *ARANIFERA* (Spider Ophrys).—*Nat. ord.*, Orchidaceæ. *Lin.*, Gynandria Monandria. Native of England, but specimen here portraited came from Mentone. — (*Ibid.*, t. 5712.)

STROPHANTHUS CAPENSIS (South African Strophanthus).—*Nat. ord.*, Apocynaceæ. *Lin.*, Pentandria Monogynia. Conservatory evergreen climber. Native of the Kaga-berg forest, near the Cape of Good Hope, at an elevation of 5000 feet. Flowers yellow and orange. — (*Ibid.*, t. 5713.)

ERYTHRONIUM GIGANTEUM (Gigantic Erythronium).—*Nat. ord.*, Liliaceæ. *Lin.*, Hexandria Monogynia. Native of North-west America. Flowers white; claw green behind, yellow in front. — (*Ibid.*, t. 5714.)

STOBÆA SPILROCEPHALA (Round-headed Stobæa).—*Nat. ord.*, Compositæ. *Lin.*, Syngenesia superflua. Native of South Africa. Heads golden yellow. — (*Ibid.*, t. 5715.)

HYBRID PERPETUAL ROSE, Duke of Edinburgh.—Raised by Messrs. Paul & Son, Cheshunt. Deep scarlet crimson, petals large and stout. — (*Floral Mag.*, pl. 389.)

EPIDENDRUM INAGUENSE.—Introduced by Messrs. Backhouse and Sons, York, from the elevated regions of the Mexican Cordilleras, where the temperature in winter falls to 40°, so that this Orchid would endure cool treatment. Flowers scarlet orange. — (*Ibid.*, pl. 390.)

CAMELLIA, Madame Ambroise Verschaffelt.—Raised by M. Verschaffelt, of Ghent. Pale blush, with pink flakes. — (*Ibid.*, pl. 391.)

TRICOLOR PELARGONIUM, Star of India.—Raised by Messrs. Rollisson. Flowers bright scarlet; leaves green-centred, with a band of crimson, and a yellow edge. — (*Ibid.*, pl. 392.)

LILIUM THUNBERGIANUM PARDINUM (Leopard-like Thunbergian Lily).—"The bulb of this beautiful Lily was purchased by G. F. Wilson, Esq., of Gishurst Cottage, Weybridge, at a sale of Japanese bulbs, and formed part of a mixed lot, comprising *L. tigrinum* and *L. auratum*. It is very distinct from all the Japanese Lilies known in England, and appears to be nearly related to *L. Thunbergianum*, though it differs somewhat from that species in its narrower leaves, and in the warty instead of glabrous surface of the base of the petals. The colours are also distinct, the centre of the petals being stained with golden yellow, and the whole surface being dotted over, as in the Tiger Lily, with dark spots. It is one of the most beautiful hardy Lilies we have seen. It has the general habit and aspect of *L. bulbiferum*, but differs in the flowers being quite smooth on the outer surface, and in the colour and markings. We suspect it may be a hybrid, in which case it might bear the name of *L. pardinum*.

"We learn from Mr. Wilson that the plant grows about a yard in height. It has a stoutish stem, which is furnished with smooth lanceolate acute leaves, these being nearly an inch broad and 4 inches long, with about three principal ribs on each side the central one, and several smaller ones lying between them. The flowers are each about 5 inches across when expanded, and are arranged in a terminal umbel, containing several flowers, the pedicels of which are branched so as to give three successions of buds, and furnished at each ramification with an ovate acuminate bract. The segments of the perianth are so far narrowed towards the base as to leave distinct openings at the base of the flower; they spread out into a shallow vase-like form, with the apices incurved; the sepaline ones are about 1½ inch broad and nearly 4 inches long, the petaline fully 2 inches broad, and the stamens about 3 inches long. Each

segment has two raised ridges running throughout its length, forming between them a deep sharp furrow, the lower portion of which is closed and distinctly bearded with short hyaline interwoven hairs. Several other indistinct ridges appear near the base of the segments, but these break up more or less into prominent warts, some of which are tipped by a black spot, and others by a stellate tuft of hairs. The filaments and style are orange red.

"The ground colour of the flower is of a reddish orange colour, the central portion of each segment being of a golden yellow, and the whole surface nearly to the edge marked over with dark-coloured dots similar to those of the Tiger Lily. The flower indeed may be described as having the general form and character of *L. bulbiferum*, the colour and spotting of *tigrinum*, and the golden band of *auratum*."—(*Florist and Pomologist*, 3 s. i. 121.)

VIOLA CORNUTA ALBA.

ANOTHER valuable addition has this season been made to the collection of desirable hardy bedding plants, and fine combinations of colour may now be produced with the Violas alone. This latest addition will prove most valuable for edgings, as there are so few white-flowered plants suitable for the purpose. Many of the white-foliaged plants used, such as the *Cerastium*, the *Centaureas*, &c., are too formal, except in geometrical arrangements; but for all beds surrounded by grass I consider the plants employed to form edgings should be neat and graceful, I therefore anticipate that *Viola cornuta alba* will become an especial favourite for this purpose. Its foliage is neat, and its habit very compact; it may be planted with the other two gems, *Viola cornuta* and *Viola lutea*, and would produce a charming effect around a bed of *Coleus*, or any other dark-leaved plant.

The three Violas may be planted as follows:—Centre, *Coleus*, or any other dark-leaved plant; next a ring of *Viola cornuta alba*; third row, *Viola cornuta*; fourth row, next the grass, *Viola lutea*. A fine effect may also be produced with *Verbena Purple King* for the centre, or a good scarlet *Verbena* or *Pelargonium*. This *Viola* seems to open out a wide field of change for the better in our flower-garden arrangements.—
J. WILLS.

NEW BOOK.

Select Ferns and Lycopods: British and Exotic, &c. By B. S. WILLIAMS, Victoria and Paradise Nursery, London.

THIS volume contains descriptions of about nine hundred species and varieties, with directions how to manage them. There are also in its pages some well-executed woodcuts, being portraits of a few of the rarer Ferns, interiors of ferneries, &c. The details of culture are full, and, we need hardly add, reliable, for Mr. Williams's skill as a plant cultivator is well and widely known. We are rather elated at being able to show our better knowledge in one point. He says that the earliest mention of Ferns with which he is acquainted is in *Shakespeare*; but if Mr. Williams refers to Lyte's "*Herbal*," published in 1578, he will find "*Filix-mas*," "*Filix-femina*," "*Osmunde* or *Water Fern*," "*Polypody* or *Oke Fern*," "*Stone Hart's Tongue*," "*Venus's beard*," and several others well described and portraited. It is quite certain, moreover, that *Dioscorides* fully 1800 years since mentions two or more Ferns under the name of *Pteris*, and so does *Theophrastus*, who lived about three centuries before *Dioscorides*.

GRIND THE TOOLS.—Keep the tools sharp or they will not cut. A dull tool wastes time, and he who permits it to work when in that condition is a dull fellow. The best turners are those who have the sharpest tools; the most successful surgeons use the keenest knives, and the most enterprising and energetic men in civil life are those whose wits have been early ground sharp, and whose perceptive faculties have been whetted by sore experience in early life. A dull tool is a useless implement, and a thick-headed unobservant person is the only one who should be found wielding it. The obtuse edge neither cleaves nor separates, but bruises and works off by attrition particles of the substance on which it operates. Grind up the tools and sharpen the wit as well; if one is keen the other will in all probability be in a similar state, from force of sympathy

alone. A boy with a dull pocket knife is one who swings on the gate, and who dodges his duty; he is one who in after-life will be a dunce and a cumberer of the ground; he will add nothing to the world of science, neither will he take from it; his existence is merely animal, his thoughts and ideas, if he has any, wholly conventional. His comrade with a keen blade,

makes models of machinery, or boats or steamers, and in time he so develops his mother wit as to be a decided acquisition to the community. Let us have all the tools in good condition, sharp, trenchant, and always ready for service; then, and then only will the result produced be equal to the time and labour expended.—(*Scientific American*.)

HULL BOTANICAL GARDEN.

I was told that Hull would soon weary me, that it well deserves its central place in the Yorkshireman's shopeforescape from "Hell, Hull, and Halifax," and that William III.'s equestrian gilded statue in the Market Place, is the object most noteworthy. So I went prepared for a lack of pastime, and I have come away with the conviction that I never was in a town much more full of subjects of interest. The unequalled fleet of steamers from all parts of northern Europe, the crowds of German emigrants, the system of unloading Wheat by hands taught to act as accurately as if moved by clockwork, the bales of Sea Grass, *Zostera marina*, for stuffing mattresses, the old brick residences—for be it remembered that here Sir Michael de la Pole revived the art of brickmaking—all, and many other objects engaged me long and gratified, so that time passed unheeded, and less than I wished was left for me to examine the Botanic Garden.

I wish that very many more such gardens were established throughout our country. No large town should be without

five hundred transferable shares of five guineas each, and the annual subscription is one guinea and a half. It is so well supported and valued that, although occupying six acres, its enlargement, or the purchase of a new site, is contemplated.

In the beds and in pots the plants are grouped according to the Natural System, and I never saw more interesting or more numerous families than some of them. For example, there were about 120 species of *Saxifraga* in pots in one group.

Whilst examining these in company with Mr. Niven, the courteous and thoroughly competent Curator, I was not a little attracted to a blind botanist led into the garden by a little lad. His name is Carey (I never knew a Carey that was not intelligent), he was formerly a solicitor practising in Hull, but became blind some thirty years since. This is a world of providential compensations, and to Mr. Carey the compensation for the loss of vision is an increase in the delicacy of the sense of touch, and in strength of memory; he sees, as it were, with the tips of his fingers, and he remembers what they reveal to him. To test this a pot containing a very small plant of *Rubus arcticus* was placed in his hands, and another in which was growing an equally small *Rubus chamaemorus*. There was something abnormal in their leaves which rather puzzled him, but he succeeded after awhile in feeling them out.

In the designing of the garden there is much skill shown in compensating for, and in obviating its flat surface; and in the details—such as the banks for Alpines, made of clinker bricks—there is much worthy of commendation; but some raised beds contrived by Mr. Niven most especially pleased me. They are oval, about 12 feet long, and about 5 feet across in the widest part. The sides, 18 inches high, are formed of slates, and kept upright and firm by cast-iron supporters of the form represented in fig. 1. These are about 2½ feet in length, with heads 10 inches broad, and a quarter of an inch thick. Painted brown, and the slates

painted stone colour, with a pendulous growing edging of Ivy or other plant, the beds must be very artistic. The supporters are placed so closely together that their heads nearly touch each other, and the boundary of

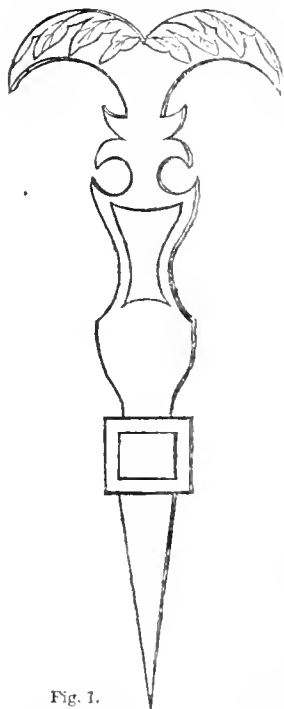


Fig. 1.

one, and they might easily be founded and sustained like that at Hull. Their value as sources of instruction, health, and amusement, are above all price.

The Hull Botanical Garden originated chiefly from the exertions of J. C. Parker, Esq., and was opened in the June of 1812. The proprietors hold among them about

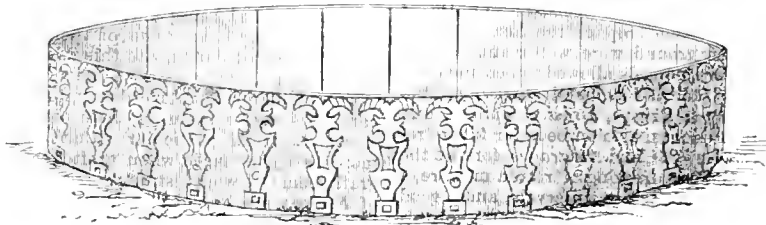


Fig. 2.

the bed then has the appearance shown in fig. 2.—G.

NOTES AND GLEANINGS.

THE want of a good horticultural library has been long felt, and more especially so after the dispersion of that which the old Horticultural Society possessed at Regent Street; but now that the Trustees of the LINDLEY LIBRARY have become a legally constituted body, not only will that want be supplied by the valuable collection of books over which they will have command, but they have determined that every student in Horticulture, Botany, and kindred subjects shall have free access to it. With the view of still further increasing its utility, they also solicit assistance by presents of books or the means of obtaining these, and, doubtless, many scientific bodies and private individuals will be glad to contribute to so desirable an object. Such as may feel inclined to do so are invited to communicate to the Trustees of the Lindley Library, Royal Horticultural Society, South Kensington, London, W.

— THE Royal Agricultural Society of England having determined to hold their Show in 1869 at Manchester, we are glad to announce that the Royal Horticultural and the Manchester Botanical and Horticultural Societies will hold in conjunction with it a great Horticultural Exhibition, which promises to be on even a grander scale than that which is to be held at Leicester this July.

— AT the SALE of ORCHIDS forming the collection of the late J. A. Turner, Esq., of Pendlebury House, Manchester, on the 2nd, 3rd, and 4th inst. the biddings which the auctioneer, Mr. Stevens, of King Street, Covent Garden, obtained amounted to £2824. The following are some of the prices realised:—*Odontoglossum navium majus* was knocked down to Messrs. Veitch for £55; and the same firm purchased a fine plant of *Cymbidium eburneum* for £15 10s.; one of *Acridor Schodden*

for £30; *Dendrochilum filiforme*, £5 10s.; and *Saccolabium guttatum giganteum*, £72 9s. Mr. Williams, of Holloway, was likewise an extensive buyer, giving for *Aërides nobile*, £13; *Oncidium Lanceanum*, £6 6s.; *Cologyne pandurata*, £7 10s.; *Anguloa Ruekeri*, £8; *Angraecum caudatum*, £17; *Phalenopsis grandiflora*, £9; *Aërides Larpentæ*, £17 17s.; *Aëridea odoratum purpurascens* and *Lælia gigantea*, £11 each; *Cypripedium barbatum giganteum*, £10 10s.; *Lælia elegans*, £19; and *Cattleya Mossiæ magnifica*, £20. Among private buyers, S. Mendel, Esq., who was an extensive purchaser, gave for a young plant of *Vanda Lowii* £23; for a fine *Aërides Fieldingii*, £34; *Saccolabium præmorsum*, £10; *Lælia elegans*, £13; *Aërides Lindleyanum*, £11 11s.; *Dendrobium Falconeri*, £21; *Aërides Farmeri*, £27 6s.; *Aërides Schröderi*, £55; *A. cylindricum*, £17; *Cattleya labiata purpurea*, £31 10s.; *Saccolabium ampullaceum*, a superb specimen, £10; *S. retusum*, £23 2s.; *S. præmorsum*, £13; and *Cypripedium caudatum giganteum*, £14. R. Warner, Esq., W. Agnew, Esq., Mr. Dixon, Mr. Parker, J. Day, Esq., of Tottenham, Dr. Ainsworth, T. Salt, Esq., and Mr. Medley, also gave liberal prices; but to attempt to enumerate more than a few out of nearly eight hundred lots would occupy more space than we can afford.

— Mr. J. N. LEE, who has been for some years the Sub-Editor of our valuable contemporary, "Bell's Weekly Messenger," is a candidate for the Secretaryship of the Royal Agricultural Benevolent Society, vacant by the resignation of Mr. Shaw. We sincerely trust that that excellent Charity may be fortunate enough to secure the service of a gentleman in every way so qualified to promote its prosperity as Mr. Lee.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Broccoli, get as many as are ready planted out. Like all hardy seedlings this season they soon crowd each other in the seed beds. Do the same with *Cauliflower* and *Cabbage* plants. *Beans* and *Peas*, except for the earliest crops of these, people seldom think of stopping them; but they should all be stopped if only to keep them within reasonable bounds. Sow successions of *Herbs*, such as *Basil*, *Chervil*, *Parslane*, *Parsley*, &c. It is a good plan to sow plenty of the latter in a quarter of Gooseberries or Currants, as it will be found useful in February and March, when to be scarce of Parsley is very awkward. *Endive*, plant out a few of these for the first supply, and a few more ten days hence, after which they will enter among regular succession crops. *Onions*, these have grown so fast lately, that unless they are well thinned out they will injure each other. Sow also *Turnips* and *Radishes* for succession; the last crop of *Broad Beans*, *Marrow Peas*, and *Scarlet Runners*, and *Dwarf Kidney Beans* for succession. One crop of the last might be sufficient all the season if the ground were well manured, the plants supplied with water, and no pods allowed to become large for seed. Plant out *Herbs*, such as *Basil*, and *Marjoram*, in a warm situation, and *Cabbages*, *Savoy*, *Brussels Sprouts*, and *Celery*, the last named in trenches, also in beds for future removal, shading the latter. *Sea-kale*, and *Asparagus*, fork up the ground of the beds; give them a dressing of rotten manure, a moderate sprinkling of salt repeated at intervals, and a good watering of drainings from the dunghill, if you can afford it, and your beds are not in a damp situation.

FRUIT GARDEN.

This is about the best time to scarify the branches or stems of hide-bound trees, a good old practice which has fallen into disuse, probably from being performed in winter, when it did more harm than good, by opening up wounds which could not be healed till the return of the sap next summer; but if performed now, the incision will be filled up in two or three weeks with a layer of soft matter from top to bottom, along which the returning sap will find a ready channel to the roots. Just try a branch or two this way, if only for experiment. I am satisfied from experience that it is a safe and useful plan to invigorate stunted branches, but it must be done at the right time. Proceed with thinning, nailing, and tying-in young shoots. There will be a fair crop of *Apricots* and *Peaches* in most places this season. Guard against leaving too much fruit, and too many shoots. It is advisable neither to exhaust the tree by over-cropping, nor to allow more wood to remain than can be properly ripened. In unfavourable situations, after seeing that the borders are not suffering from drought, keep them clean and smoothly raked near the wall, or cover them to the width of a yard with tiles; the reflection of heat from the tiles, and

keeping the borders rather dry, will insure the earlier maturation of the wood, but if the soil be allowed to become soaked with rains in the autumn, all the extra labour will be worse than thrown away.

FLOWER GARDEN.

About the beginning of June is generally the time for budding *Roses* that are wanted to push into heads this season, such as we call Monthly *Roses*; but already we are in the beginning of the month, and hardly a bud can be inserted as yet, the wood of both bud and stock being so green and soft; it is also time to begin to put in cuttings of all the China and Climbing *Roses*, taking the young stubby shoots which form along the main branches, and are about 4 or 5 inches long. These are now nearly ready for making into cuttings, and simple as this process is, there are many who do not know it. Except where American plants are mulched, they must receive a thorough deluge of water, by forming basins round them, and afterwards covering the wet soil with dry earth or some kind of mulching. Those who have *Roses* in pots may now use them advantageously for budding, and on the Tea and China varieties will obtain growth, and probably flowers in the autumn. *Auricula* and *Polyanthus* seed will now be becoming ripe; as soon as the capsules assume a brown colour, and give indications of opening, they must be gathered. Dry them well and put them in small tin boxes. Put a glass shade over the Tulips, the seed vessels of which are intended to be saved, to prevent the wet lodging in the apex. Those bulbs, the leaves of which have suffered from canker, or have sustained injury from early frosts, may be taken up, as they are apt to mildew if allowed to remain in the ground too long. Carefully shade the *Ranunculuses* intended for exhibition; semi-double flowers for impregnation must not be covered, as the sun and air are essential in the process of fertilisation. Water the paths about the beds so as to make the surrounding atmosphere as moist as possible. Wetting the foliage at this season, especially with spring or hard water, is rather detrimental than otherwise. Continue to tie *Carnations* with soft worsted; examine those previously fastened, and see that the tie is sufficiently loose on the stick to allow the stem to elongate. Thin out the buds, the crown or topmost bud usually produces the largest and best bloom. If the plant is strop, reserve five, on the contrary three are sufficient if the plant is weak. Pinks are not generally lazing well this season. Pippings must be kept regularly moist, and well protected from the direct rays of the sun. Continue to put in cuttings of Pansies.

GREENHOUSE AND CONSERVATORY.

Of all the great families of conservatory plants, the Chinese *Azalea* has made the most rapid improvement in size, shape, and colour, and being amongst the easiest to force early in spring we may have some of them in flower for this house from the end of January to this time. In ordering them from the nurseries, amateurs who are not well versed in the cultivation of plants should order "worked plants," while some gardeners prefer them on their own roots, in order to keep them dwarf for particular situations; but they are much more easily managed when grafted, and this is a good time to graft them. I would strongly recommend, when young plants of *Azaleas* are brought in, that they should be turned into a bed of sandy peat in a turf pit or common cold frame for the next three or four months; they can always be removed with safety into pots. The general routine of watering and training greenhouse plants, with attention to cleanliness, is all that needs attention now, unless some of the plants may want another shift. It might be worth while to mark such plants as flower from April to June that may be becoming too large or straggling, and are not in good health. Keep them in a warm sheltered place, and when winter-forcing is begun take them in to see how early they can be flowered. In very many cases plants in flower do not require so much water as when they are in more active growth; but the strong-growing conservatory climbers planted out in the borders can hardly have too much moisture now.

STOVE.

Besides the daily routine of watering, shading, giving air, and training the plants, with an occasional shift to some more promising specimens, there is little to be remarked on just now. The great fault in almost all plant houses is their being too full of plants, and consequently the plants injure one another; but as a number of stove plants are much benefited by a change into some of the cooler houses, this house never need be injuriously crowded in summer.

FORCING PITTS.

The young stock of Gardenias, with all the novelties recently propagated, are the chief occupants here; and now begins the propagation, by grafting, of Camellias, Rhododendrons, and Azaleas. Where expedition is preferred these may be kept in a strong, moist, and close heat till the grafts are united; but they will do perfectly well in a close cold frame well shaded, only they take longer time.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

HERE, with the exception of planting Cauliflowers between rows of early Peas, where the former would be protected by the shade of the Peas, no planting was attempted, as the ground and the atmosphere were alike dry. We have read of storms and downpourings of rain, north, south, and all round us, but up to this, the 6th of the month, we have had only a few drops of rain in our district; and though established crops in the kitchen garden stand well, especially when assisted with mulching, it would be useless to transplant much, unless shading of some kind were given. In such weather garden pots afford good shading for a few days to all the Cabbage tribe, when the plantations are not extensive, removing the pots at night, and replacing them before the sun becomes very powerful. As much watering with us is entirely out of the question, we neutralised the excessive heat and dryness by surface-hoeing with the Dutch hoe, and mulching Cauliflowers, Peas, &c., with litter and short grass.

During the last days of the week the atmosphere was very dry with us—a fact we arrived at by no scientific instruments, but from the simple observation, that though there was a fierce sun all day, and a clear sky the most of the night, there was next to a complete absence of dew in the morning under the very circumstances in which we would have expected abundance, if there had been much vapour in the air near the ground to be condensed into dew. In such a state of things we forbore planting Celery and other crops, as it was much easier to water where the plants were close together in beds, than to spread the watering over a larger surface.

Potatoes.—Partly from press of other work, and partly on purpose, we have earthed-up but little. If planted 6 inches or more from the surface, Potatoes are little better of the earthing-up. In very dry seasons they are the worse of it, as the roots do not obtain enough of moisture, especially when the ridge resembles the point of an acute-angled triangle. In very wet summers and autumns, we think the ridged-up Potatoes are less liable to the disease. In loose, open soils, we do not see much use in the earthing-up, so as to make an open gutter between every two rows.

Weeds.—The hot weather made these grow so fast that we gave up bedding-out in the flower garden on the Saturday, in order to have at least one day's cleaning and surface-hoeing. It is bad policy, if it can be avoided, to permit seed weeds to require to be treated with anything but the Dutch hoe. In such weather as the last days of the week, ground hoed shallow will not only have a loose surface, but every weed cut up will soon disappear under the drying of the sun, and multitudes of weeds would be destroyed by the hoe that could scarcely be discovered with the eye. Weeding by the hand should be avoided as much as possible.

FRUIT GARDEN.

Very much the same as last week. Mulched our fruit trees in pots heavily so as to save watering, which the mulching does very much. In this case it chiefly consisted of rather fresh horse droppings, and a little litter, rather fresh, which had been in a heap for ten days, and heated violently. We used the centre of this heap, after passing it through a rough open sieve of rather more than 1-inch mesh, to exclude the longer pieces of litter. We know we lost fertilising power by this heating, but we killed all the ants that might have been in the droppings, also the stray seeds of Wheat that might have been in the straw for litter; and if this is not done, mulching with such material will provide plenty of future work in weeding the surfaces of the pots. Just now, and before we get our tanks replenished, we must be very economical of water.

Strawberries.—Some idea of the dryness may be formed from the fact, that blackbirds and thrushes, which have visited us in clouds this season, have begun their ravages on Cherries and Strawberries which are yet quite green out of doors. It is not likely that we shall gather Strawberries out of doors for

a week at least, but the berries of Keens' Seedling, &c., are of a good size though quite green, and great numbers of these are picked and eaten, a sure proof that the birds can obtain no other juicy food. In such weather old gardens generally suffer greatly, but a good rain relieves them for a time from the birds, as the latter then find succulent food elsewhere.

We have now removed most of the Strawberries from under glass, except in the front of the orchard houses, where they have done good service, and where we hope to gather until we have them out of doors, if we can keep the birds from them. The blackbirds helped themselves to some fine fruit of the British Queen in the Peach house, forcing us to net the openings for ventilation. From having a fair amount of light and air, the Strawberries in the orchard house are almost as good in flavour as when grown in the open air, and better than out-door ones in dull and drizzly rainy weather. All Strawberries are best the fresher gathered they are, as a general rule, but to have the full flavour they should be gathered dry. Those picked in the morning will be more juicy; those gathered in the afternoon after a sunny day will be more sweet and better supplied with saccharine matter. When we have wanted Strawberries early in the morning, before they would be dried after a dewy night, we have found it a good practice to gather on the evening before whilst the fruit and leaves were quite dry, and place the fruit thinly on fine paper for the night. This may be of use to those who wish to have their Strawberries at the best. The best fruit are comparatively insipid when gathered out of doors after a rainy day. Sun and dryness are necessary for flavour.

ORNAMENTAL DEPARTMENT.

Lawn.—We have used the daisy knife several times, just to make all look green. A few tough bents appear here and there to take off the uniform level, when examined close at hand, but looked at from a little distance the grass appears as well as if mown and swept several times. We shall be very unwilling to mow until rains come. All is now green; but if closely mown and another week of parching weather should come, we should expect a brown surface instead of a green one. The only disadvantage of the knife, instead of mowing or machining, is that we shall be obliged to use the scythe instead of the machine, and that will take more time at the first going-over. No flowers on a lawn will compensate for the want of greenness, and many a lawn might be green instead of brown but for the merciless cuttings it is subjected to in hot parching weather. The mere knocking-over of Daisies and Plantains, &c., is very different from cutting down so short in such weather the tender blades of grass. Better, in our opinion, have a green surface if not quite so short. If some of the grass should be 2 or 3 inches in height there will be no trouble in walking on it in dry weather, and when wet comes it will be easily mown, and then the machine may be used, though even then we like to employ the scythe occasionally, as it keeps all more level and nice at bottom.

Planting.—Gave up on Saturday owing to the excessive dryness, and much hoeing and cleaning being required. Deferred planting lots of annuals from the same cause. A little delay in such cases is often as good as too much forwarding. "What! not done planting yet?" has now no terrors for us as it used to have. What is planted is standing the test of the weather well. The plants were well watered at the roots, and the dry earth replaced on the surface; and though most of them were not turned out of pots, but lifted from earth beds in which they had been planted, they showed but little distress with all the bright sun until the 6th (Saturday), and instead of watering, the syringe and the garden engine were employed, just to spirt over the foliage and ground, on which the water did not rest long, but it arrested evaporation from the plants, and what was spilt on the ground refreshed them, too, as it rose again into the atmosphere, and by the evening every leaf was as erect as possible.

Such damping of foliage can scarcely be called watering. Many would be afraid to do so. Counsels out of number are given never to water, and, above all, never to wet the foliage of a plant when the sun shines, or dire were the results that were sure to follow, in scalding and burning even out of doors, if the sun shone on damped foliage. At present we say nothing of plants under glass, though even there, if the glass is good, no burning spots in it, and there is plenty of air to prevent condensed vapour, the danger in many cases is more problematical than real, but out of doors we have never noticed this wondrous scalding and burning. On the other hand, we have often noticed how gorgeous and lovely vegetation looked when after a heavy sunny shower, the sun came forth and all vegetable nature seemed to rejoice, instead of being in the least

sensitive to approaching danger. Will any of our observing readers tell us of instances within their knowledge in which vegetation was blighted and scalded after a sunny shower? So much for matters in the extreme. Our readers know well that we disapprove of watering in sunshine when it can be avoided. On the same principle, after this season it will be best to water during the afternoon and evening, as the plants then slowly and leisurely absorb the water and derive the benefit of it. When watered in the morning, the sun takes the moisture all away too quickly. We prefer watering house plants in the morning from the middle of October to the end of April, where no very high temperature is maintained, as the watering will always tend to lower the temperature, and that is best met by the rising temperature of the day, instead of being decreased by the waning temperature of the night. We have gone, however, from our starting point, which was merely to hint that newly-planted subjects out of doors in very bright days may often be benefited by a sprinkling overhead, when deluging at the roots would hardly have the same result, if they are wet enough already there; and it is certain that one pailful of water will do as much good over the foliage, when put on as a fine bedewing, as twenty pailfuls would do at the roots.

We intended saying something about cutting flowers, the advisability of having plants for show, and plants for cutting from, and a definite place for each; also, on the moving of plants when done flowering, as Camellias, Azaleas, Epacrises, and Heaths; on pruning the latter two, and never cutting into the old wood, unless rarely, however short be the spur left of the last year's wood; the importance of a suitable place for all these plants, and when young the importance of pits, and better still of wooden boxes for such purposes; the superiority of the wooden box being that not only can you give air top and bottom as in a pit, but by setting the box on a brick at the corners you can also have a free circulation of air beneath, and through among the pots as well as the tops of the plants. Unfortunately such matters must wait, but much that we intended saying will be found in the last articles of Mr. Keane, to which we would refer our readers, as many details are there carefully given.—R. F.

COVENT GARDEN MARKET.—JUNE 10.

VERY little variation is to be noted here. Supplies are ample, and there are large quantities of Strawberries from the open air. Old Potatoes are almost superseded now by the new ones. The latter from Lisbon bring from 15s. to 20s. per cwt.; Ashleaf, from 18s. to 22s.; Cornish, from 12s. to 15s.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples $\frac{1}{2}$ sieve	2	0 to 4	Melons..... each	4	0 to 8
Apricots doz.	2	0	Nectarines..... doz.	10	0 to 5
Cherries lb.	0	9	Oranges..... 100	4	0 to 10
Chestnuts bush.	0	0	Peaches..... doz.	18	0 to 35
Currents..... $\frac{1}{2}$ sieve	0	0	Pears (dessert) .. doz.	0	0 to 0
Black..... doz.	0	0	Pine Apples..... lb.	6	0 to 10
Figs..... doz.	10	0 to 15	Plums..... $\frac{1}{2}$ sieve	0	0 to 0
Filberts..... lb.	1	0	Quinces..... doz.	0	0 to 0
Cobs..... lb.	0	9	Raspberries..... lb.	0	0 to 0
Gooseberries .. quart	0	4	Strawberries... per lb.	0	6 to 2
Grapes, Hothouse.. lb.	8	0 to 12	Walnuts..... bush.	10	0 to 15
Lemons..... 100	8	0 to 12	do. per 100	1	0 to 2

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes..... doz.	2	0 to 3	Leeks..... bunch	0	3 to 0
Asparagus..... 100	2	0 to 6	Lettuce..... per score	0	6 to 1
Beans, Kidney..... 100	1	6	Mushrooms..... pottle	2	0 to 3
Beet, Red..... doz.	2	0 to 3	Must.& Cress, punnet	0	2 to 0
Broccoli..... bundle	0	0	Onions..... per bushel	6	0 to 7
Brns. Sprouts $\frac{1}{2}$ sieve	0	0	Parsley..... per sieve	3	0 to 4
Cabbage..... doz.	1	0 to 1	Parsnips..... doz.	0	9 to 1
Capiscums..... 100	0	0	Pears..... per quart	1	0 to 1
Carrots..... bunch	1	0	Potatoes..... bushel	4	6 to 5
Carlinflower..... doz.	3	0	Kidney..... doz.	4	0 to 6
Celery..... bundle	1	6 to 2	Radishes doz. bunches	0	6 to 0
Cucumbers..... each	0	4	Rhubarb..... bundle	0	4 to 8
Endive..... doz.	2	0	Sea-kale..... basket	0	0 to 0
Fennel..... bunch	0	3	Shallots..... lb.	0	8 to 0
Garlic..... lb.	0	8	Spinach..... bushel	2	0 to 3
Herbs..... bunch	0	8	Tomatoes..... per doz.	3	0 to 4
Horseradish .. bundle	3	0 to 5	Turnips..... bunch	0	6 to 1

TRADE CATALOGUE RECEIVED.

James Veitch & Sons, Royal Exotic Nursery, King's Road, London, S.W.—*Catalogue of New and Beautiful Plants.*

TO CORRESPONDENTS.

FLOWER BED IN A CHURCHYARD (*Churchyard*).—Your semicircular bed would look well thus arranged—white *Cerastium* outside border, then

blue *Lobelia*, yellow *Calceolaria*, and *Perilla* for the centre; or a pretty bed might be carpeted with *Mignonette*, and dotted with little groups of white *Pelargoniums*.

SEEDLING ANTIRRHINUMS (*J. Carter*).—There is nothing new among your seedlings. One, a large yellow variety, seems the best and would be worth cultivating. The others resemble many other seedlings.

LETUCE FOR WINTER AND SPRING (*H. C.*).—For use late in autumn and early in winter you may sow in the middle of July, but the main winter sowing should take place in the second or third week in August. Another sowing made three weeks later may be useful for spring if the winter be tolerably mild.

AMMONIACAL LIQUOR (*J. H. W. Bunbury*).—That referred to in the work you name is the same as the liquor from the gas works, but it varies in strength, and must, therefore, be used with great caution even after being diluted with several times its bulk of water. We would not recommend its application to a Vine border.

GRAPES DESTROYED (*J. R. Boydell*).—The berries you enclosed were destroyed by what gardeners call "the spot." We believe it to be occasioned by the growth of the Vine and its crop being faster than the roots can supply sap to sustain. Keeping the roots warmer, and the house rather cooler and freely ventilated, are the most effectual remedies.

GRAPES (*Nottinghamensis*).—The Muscat E-chokata is a synonym of the Muscat of Alexandria. Fertilisation should be assisted as recently directed. We do not know the book on Vines which you mention.

DURATION OF A VINE BRANCH'S PRODUCTIVENESS (*Jersey*).—The time that a Vine stem on the spur-pruning system will continue to produce fine fruit depends entirely on circumstances. We have known Vines thus produce without any signs of decay for between twenty-five and thirty years. We have seen others that seemed as if they needed the stimulus of fresh wood in five or ten years. In our own practice we seldom renewed such a stem at once. We would begin by leaving a shoot at the base one summer, which would fill a third or a half of the length of the latter next season, the spurs on the old stem being cut off for that length; and only when we had a new stem and shoot to reach the top of the house did we entirely remove the old stem. This is a good plan for renewing the strength of old Vines, and there need be no interruption of crop. The only difference in treatment is, that there are few laterals left on the bearing shoots of the old stem, but more strength is thus thrown into the young shoot, which keeps up a good root action.

VINE LEAVES BROWNED (*Mrs. M. S.*).—The Vine leaf has the signs of scalding with hot vapour, and early air-giving is the remedy. As only one Vine is affected, and one side of your Peach tree, we think as the latter is undoubtedly burned, so the Vine may also be burned. Examine the glass carefully, and you will be sure to find some scars and faults, and dabbing them with white paint will prevent the burning the Peach leaves.

MOLES IN VINE LEAVES (*E. S. Chelsea*).—The mode of planting the border and general management have nothing to do with the hole and eaten appearance of the Vine leaves. This is done by weevils, which you must watch for at night. If you spread a sheet beneath the leaves and shake them at midnight, you will most likely see some of your visitors drop. After thus clearing the Vines, fix some wool or wadding dipped in oil and turpentine on the stem of the Vine near the ground, to prevent them getting on the Vine so easily. We know no method of extirpating them except by night-watching.

VINE BLOSSOM INJURED (*Black Hambro*).—Your Vine blossom has been scorched by the late excessive heat before it was enabled to be developed. There does not appear to be any disease.

DEODORISER FOR SEWAGE (*Opponax*).—Powdered charcoal, gypsum, and chloride of lime (more properly called chloride of calcium), are all deodorisers and might be added to the sewage. They would promote rather than injure vegetation. The earth itself is a powerful deodoriser; and if you dig-in the sewage, or poured it into the trench made by the spade and covered it with the next spit, the offensive smell would at once be removed.

GAS AMMONIACAL LIQUOR (*A. B. J.*).—The proportion depends entirely on the strength of the gas water. We should be afraid to use it strong, better be on the safe side.

MANAGEMENT OF MANETTI ROSE STOCKS (*Wylie Green*).—"Manetti stocks cannot be planted too shallow if they are rooted plants; neither can they be budded too low. For this purpose it is best to plant them in shallow trenches. It is preferable to bud them on the main stock; but they may be budded low on one or more branches if so desired. It is usual to leave one shoot growing and to cut the others off. This may be done when winter sets in, or in the spring. I bought last winter a lot of Manetti Roses in dormant bud with the plants cut down. I planted them in a trench, filled the trench with stable litter, and closed with earth over the litter loosely, so as not to exclude the air from the concealed buds. They are now growing beautifully. If you wish to increase your Manetti stocks by cuttings you may, without injury, let all the shoots stay on till you wish to plant the cuttings in September. The cuttings should be 10 inches in length, and planted 6 inches deep, a leaf or two being left on the tops of the shoots. They should be trodden-in firmly, and horse litter or straw placed among them. After the shoots have grown long they may be stopped by pinching off the tops. With regard to Briars, where wind does not prevail, or where the shoots are not so heavy as to break themselves down, they may be left on. It is, however, safest to cut them back to 10 inches. Before budding water all kinds of stocks well, and after the stocks are budded, if the weather is hot and dry, it is a good plan to tie a deck or some other leaf over the bud to act as a temporary shield. If Manetti stocks are budded early, as soon as the bud has taken and swells you may cut off the shoot of the Manetti to within 3 inches of the bud, and flower the Rose in the year of its budding; but it is not good to do so late in the season.—W. F. RADCLIFFE."

BUDDING ROSES IN JUNE (*A Budding Greenhorn*).—"Fig. 1 in page 391 is a view looking down on the top of the stock, and what appears to be a Rose is the grain of the wood. The budding knife is shown in halves, because both ends are made use of—the blade in fig. 2, and the handle, which is of bone, in fig. 1. These knives can be procured at any seed shop.—T. J. S."

ROSE FLOWERING ONCE IN TWO OR THREE YEARS (J. Allen).—We do not know the Rose that blooms only once in two or three years. Some strong-growing Roses will not bloom if pruned closely; but if several long shoots are left and are well ripened, small flowering shoots will come from every bud on these long shoots in the following year. This may be the case with your Rose. Sow the Walcheren Broccoli now.

CUCUMBER PLANTS IN BOXES (Lancashire).—At this season we should have liked boxes larger than 14 inches by 10 by 9 for Cucumber and Melon plants, but they will do, only they will require well watering. As soon as established, use weak manure water and frequent mulchings with sweetrotten dung. We have had such boxes topped up several inches above the rim with mulching.

CUCUMBER LEAVES FLAGGING (Whit Monday).—Less heat, more air, and less moisture will benefit the Cucumbers, and render them less liable to injury from the sun. We do not like the brushwood and long dung over the pipes for bottom heat. Either the roots go through it and are scorched, or the heat will not rise freely.

CACTI NOT FLOWERING (Idem).—Expose the Cacti under glass as much as possible. In August set them out in front of a fence facing south, and give no water except what is wanted to keep them from shrivelling.

CUTTING OUT AN OLD VINE ROD (Idem).—If you do not care for the fruit on the old stem of the Vine you may cut it away now, to strengthen and afford space to the young shoot which you intend to take its place, more especially as that already reaches the top of the house.

MEDINILLA MAGNIFICA (Idem).—It is a native of the Philippine Islands.

PELAGONIM LEAVES DISEASED (H. H. T.).—We think the leaves withered have been scalded by condensed vapour about them when the sun shone on them. We recommend a drier atmosphere and plenty of air, so that the foliage may be kept dry. Some of the holes resemble those made by spot, and the above is the best cure and preventive. Others look as if they had been nibbled by weevils; and these insects must be looked for at night, or tempted with something sweet, as sugar and arsenic.

STRAWBERRY PLANTS BARREN (Dr. Dixon).—As this is the second season such numbers of your British Queen Strawberry have proved barren, we would remove the plants and save runners from those that are fruitful. We saw a fine bed of British Queen last September twelvemonth. The plants were then heavily mulched with rich manure, and were receiving strong manure-waterings. Comparative dryness would have been better. The plants grew very fast, but they yielded scarcely any fruit last season. Left alone, about half are showing bloom this season. If the barrenness is from overfeeding last year you may try again; but if not, we would remove the barren plants.

DESTROYING SCALE ON PEACH TREES (Subscriber).—Scrape the trees with soft-soap water, one ounce to the gallon, using it at 90° or 100°, and next winter apply it to the trees as hot as possible. The ants like the scale and other insects, using them as we do a milch cow. They do no harm to the tree, but woe betide your fruit when it ripens. See late numbers for modes of trapping and destroying ants.

PEACHES MILDEWED (C. P.).—Your Peaches are mildewed. Apply flowers of sulphur, and give plenty of air.

TRAINING RED CURRANT TREES (E. M. B. A.).—Red Currant trees will be much benefited by being pinched back now, just as you propose for dwarf standard fruit trees. Perhaps the best way of growing them and Gooseberries is espalier fashion to a strained wire trellis. A quantity of fine fruit may thus be obtained, and the ground round or between the trees may be cropped.

CLIMBERS FOR AN EASTERN ASPECT (J. S.).—Any of the hardy Clematis, Honeysuckles, and climbing Roses will suit you.

CLIMBERS AND PLANTS FOR CONSERVATORY (A. H. F.).—A few good climbers for a conservatory are Clematis Fortunei, double white; C. lanuginosa, lavender; Soliya linearis, blue; Kennedya inophylla floribunda, blue; Lapageria rosea, rose; Passiflora racemosa rubra, reddish; Rhychospermum jasminoides, white; Tropaeolum Triomph de Gand, orange; and T. tricolorum, orange and yellow. Of plants you may have Camellia Fimbriata, white; Lecana superba, crimson; Stori, rosy pink; Valletaria, rose; and Queen of Beauties, bluish, veined with pink; Azalea Cheloni, orange scarlet; Gleditsia formosa, white, striped and blotched with scarlet; Etolo de Gand, shaded salmon; Queen Victoria, white, striped and spotted with purple; Criterion, salmon pink with white edge, and spotted with lake; and Mars, orange scarlet. Of other plants the following would be suitable:—Epacris Lady Penmore, The Bride, and Hyacinthidors; Acacia longiflora magnifica, A. oleifolia elegans, and A. Drummondii, all yellow; Chorozoma cordatum splendens, brownish orange; Correa Brilliant, scarlet; Cyclamen persicum; Eriosemon intermedium; Dracophyllum gracile, white; Epiphyllum Russellianum, salmon; Inanophyllum minutum, orange and yellow; Indigofera decora, bluish purple; Kalosanthus coccinea superba, rosy red; Monochlora ensiferum, rosy purple; Pimelea Hendersoni, pink; Polygala Palmatensis, purple; Rhododendron jasminiflorum, white; Statice brassicifolia, lavender; and Valletta purpurea, scarlet. We hope we have not named too many, but you may reduce the number, and add to them by plants from seed, which may now be sown, as Cinerarias, Calceolarias, Fuchsias, Petunias, Primulas, and Pelargoniums. These will flower finely in the spring and summer of next year, and you may add to them by sowing next spring such annuals as Balsam, Cockscorn, Globe Amaranth, Celosia pyramidalis, and other tender and half-hardy annuals.

LAUREL CUTTINGS (L. A. S.).—Laurel cuttings should be put in at the end of September, and not later than the middle of October. The cuttings should have an inch or two of the old wood in addition to the growth of the current year, and be inserted two-thirds of their length in the soil, which should be made firm about them. Scarcely a cutting fails.

CUTTING-BACK BROOM (Idem).—Broom may be cut back as soon as the flowering is over, but leave some portion of the young wood to furnish new shoots, for if cut-in to bare stumps old plants sometimes die. The above remarks apply equally to double-blossomed Furze. Old plants are best replaced by young plants.

ROSE CUTTINGS (Idem).—Put in Rose cuttings in July, just when the shoots have shed their flowers; place them in a frame, and keep them

close and shaded until rooted. It is a successful mode of propagation. You will find an answer to your other question in "Our Letter Box."

PLANTS FOR SPRING BLOOMING (M. E. M.).—If you now procure good plants of the Cliveden Pansies you may by making every available portion into a cutting, and continuing propagation up to August, secure enough plants for two small beds. We should plant them in the beds as early in October as the removal of the bedding plants will allow, but planting may be deferred until March; then remove the plants with a good ball to each. The seed of Silene pedicularis should be sown in the end of September, and the seedlings pricked-off in a warm situation when large enough to handle, and planted out in spring; or they may be planted out in autumn on the removal of the bedding plants. The seed of Myosotis sylvatica should be sown now in light sandy soil, the plants being pricked-off when large enough to handle, and removed to the beds in autumn or spring with a ball of earth to each.

REMOVING LARGE EVERGREEN TREES (T. N.).—We have little hope of your removing a Cedar of Lebanon 30 feet high and 3 feet in circumference at 1 foot from the ground. The tree may probably be moved at great expense and with great difficulty by hand power, and though it would be more easily moved by machinery, we are very doubtful of its ever thriving afterwards; indeed, we would much prefer planting a young tree, which we know from long experience would after some years make a handsome tree than one removed. We have never known a Cedar of the size and kind you name do any good after removal; but we have seen many instances of supposed successful removal, in which after a few years the trees became unsightly objects. The removal of large deciduous trees can be effected with greater safety and prospect of growth afterwards than that of such trees as the Cedar of Lebanon, which make roots very distant from the stem. The removal of large evergreen trees is best effected in summer as soon as the growth has become firm; there is the best time to move all sorts of evergreen trees and shrubs, both young and old, and the transplanting of deciduous trees is best performed when the leaves are falling. The moving of all trees and shrubs is facilitated by taking out a trench round them in the autumn or spring preceding that in which they are transplanted.

REMOVING SHRUBS (J. B.).—The best time to remove the Thorn would be as early in November as the leaves assume their autumn tints. The Cypress and Arbor Vites would be best removed as soon after the middle of September as the weather is cloudy and showery. In removing them care should be taken to preserve to each a good ball of earth, and to retain as many roots as practicable. Digging a trench round them should have been done before growth took place, and fully twelve months previous to the contemplated lifting. In case your shrubs make but little growth this summer their removal had better be deferred until next April, except in the case of the Thorn, which should be removed in November.

LABURNUM WITH VARIOUS-COLOURED FLOWERS (W. Boyd).—It is Cytisus Adami, and was originally produced upwards of forty years ago in budding Cytisus purpureus on the common Laburnum. In this process it is supposed that a cell of the one species became divided and united to a cell of the other, and the result has been a plant producing not only flowers of each species separately, but others partaking of the characters of both. There are other instances in the vegetable kingdom in which a similar union of cells is believed to have taken place, but Cytisus Adami is the best known and best established. The subject has been referred to several times in the volumes of this Journal.

PAINTING FLOWER POTS (Clay).—See what "G. S." says to-day.

WATER WEED (C. H.).—The water weed you enclosed is Conferva floccosa, but we cannot say how you are to get rid of it, unless perhaps by emptying the pond; and, as the bottom is concreted, give it a good dressing of salt.

PROPAGATING CLEMATISES (J. M.).—The present time is not the best for the propagation of Clematises, but the operation may be done now, the shoots being layered when the wood is about half ripe. A small pot should be one-half or three-parts filled with sandy loam, adding a slight admixture of sandy peat and silver sand. The pot should be sunk in the ground to the rim, and the shoot to be layered should cross the pot at a joint, which should have a small slit cut in it with a sharp knife, as in layering Carnations; but on account of the smallness of the shoot of the Clematis the cut must be of less depth and length—indeed, it will be enough if the shoot be slightly cut immediately under the joint. The shoot may be laid across the pot and secured at the joint with a peg; then fill to the rim of the pot with fine soil. The part of the shoot beyond the pot may be tied to a stake placed in the pot, and in dry weather give water to keep the soil moist. The shoot will most likely be well rooted by autumn, when it may be detached from the old plant. If no shoots are situated near enough to the ground to permit of the layering in a pot sunk to the ground, the pot may be raised and the shoot layered, only the pot in this case will require constant daily watering in summer. Cuttings of the half-ripened wood inserted now in pots filled with light sandy loam and peat, and placed in a cold frame or pit, and kept close and shaded from bright sun, would in all probability root well. The cuttings should have two good joints, one of which should be inserted in the soil, but some Clematises are only to be propagated by layers.

NAMES OF PLANTS (O. Z.).—1 and 3, Asplenium bulbiferum; 2, A. filicidum; 4, A. lucidum; 5, Davallia sp.; 6, Gymnogramma tartarea; 7, G. ochracea. (T. P.).—Not possible to name such young specimens. (A. Subscriber).—Combretum racemosum. (M. H. R.).—Carex pendula. (Mr. Cobbett).—Crataegus pyrifolia. (T. Pearson).—1, Cotoneaster rotundifolia; 2, Eucalyptus europaeus. (F. G. Sherrin).—Lastrea dilatata. (W. H. M.).—All Cystopteris fragilis. (W. B. S.).—The Glanders Rose, Viburnum opulus, a native of England. (H. E. S.).—We cannot name plants from leaves only. (A. B.).—We cannot identify Saxifragas, nor any other plants from their leaves only. (G. A. S.).—2, Pteris flabellata; 3, Cyrtomium falcatum; 4, Adiantum diaphanum; 5, Blechnum occidentale; 6, Asplenium bulbiferum; 8, Doodia cordata; 8, Davallia novae-zealandiae; 10, Onoclea sensitiva; 11, 12, 13, Cystopteris fragilis; 14, Nephridium exaltatum; 15, Athyrium filix-femina. (Pteris).—Melittis melissophyllum. (J. A. Boyd).—Polypodium dryopteris. (J. W. Dick).—1, Neottia nidus-avis; 2, Galium cruciatum; 3, Anthriscus sylvestris; 4, Lychnis dioica. (J. Scott).—Saxifraga elatior. (T. B. W.).—1 and 2, bad specimens; 3, Habrothamnus fasciculatus. (T. C.).—1, Erius alpinus; 2, Veronica chamaedrys; 3, Chrysosplenium oppositifolium. (E. D. S.).—Onosma stellatum. (J. C. G.).—Menyanthes trifoliata.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending June 9th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 3	29.937	29.961	75	43	60	58	S.E.	.00	Very fine; clear and fine; fine and very clear.
Thurs.. 4	30.006	29.952	63	47	60	57	S.	.00	Dull, cloudy; very fine; cloudy at night.
Fri. ... 5	30.072	30.043	68	45	60	58	S.W.	.00	Clear and fine; very fine; clear and fine.
Sat... 6	30.144	30.062	80	48	61	58	S.W.	.00	Very fine; exceedingly hot; fine but cloudy.
Sun... 7	30.137	30.090	75	35	60	58	N.W.	.00	Clear and fine; cloudy, very fine at night.
Mon... 8	30.142	30.110	70	36	60	57	N.W.	.00	Cloudy; overcast; clear and fine, cold air.
Tues... 9	30.119	30.088	74	34	60	56	S.	.00	Clear and very fine; overcast; fine at night.
Mean	30.088	30.045	72.14	41.71	60.00	57.43	..	0.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GAME FOWLS IN FORMER YEARS.

THE most celebrated breeders of the last generation were the following titled persons, as I have read—viz., the Duke of Leeds (about a hundred years ago); the Earl of Derby, Knowsley Park, Prescott; the Earl of Mexborough, Methley Park, near Leeds; the Earl of Lichfield, Sloughborough Park, Staffordshire; Lord Hill, Hawkstone Park, Shropshire; Lord Ongley, Old Warden Park, Bedfordshire; Lord Huntingfield, Heveningham Park, Suffolk; Sir Harry Goodricke, Bart., Studley Castle, Alcester; Sir George Sitwell, Bart., Renishaw Park, Derbyshire; and Sir Thomas White, Bart., Tuxford Park, Notts.

Charles II. patronised the cockpit, and amongst other colours was partial to the Black and Brassy-winged Black Game fowls, a colour now generally thought both too slow and too soft to be very good. King Charles frequented the Royal Cockpit at Whitehall and the Newmarket Cockpit.

The Duke of Leeds above mentioned had a very strong and powerful breed, called the "Shackbags," or "Shakebags," now extinct, having been latterly crossed with the large Malays and entirely spoilt thereby. The Duke's men used to bring their birds to fight in large bags, shaking the bags, and challenging all comers to single battles, in which the great size and power of the Duke's breed generally gained the victory. These birds were too large to fight in mains, and were fought in the "byes" and single battles, against the "catch weights" and "turn-out" birds.

The Earl of Derby, as previously mentioned, bred the white-legged Black-breasted Reds with yellow or daw eyes, and this breed was more than sixty years in the Stanley family, and the birds were called the "Derby Reds."

Lord Hill, I have been informed, bred the Silver-Grey breeds, both Dark Silver-Greys and Silver Duckwing Greys. Lord Huntingfield bred, as before stated, the white-legged Duckwings with yellow or daw eyes. The Earl of Lichfield had a breed of "Tasselled Spangles" amongst his other colours, which were in existence in 1832, but are since bred out. Sir Harry Goodricke, I think, had the Brown Reds.

The greatest patrons of the Royal Cockpit, Tufton Street, Westminster, were the Earl of Derby, Lord Ongley, and Mr. Germaine, the latter gentleman more especially so, and the feeders principally employed there were Gilliver, Potter (for the Earl of Derby), Nash, Leicester, and Walters. The favourite fighting weight was 4 lbs. 8 ozs., or 10 ozs., 2 ozs. over 1½ lbs. being allowed, and the cocks were as large-framed, light-fleshed, and long-reached as possible at this weight, or as "fine March cocks" as possible at the weight allowed, which birds are the fastest fighting of all.

The middle of the reign of George IV. was about the greatest era of cock-fighting, and the qualities of the best strains of birds were then best developed. Brown Reds were most used, and then Cheshire Piles, Dark Greys, white-legged Black-breasted Reds, and willow-legged Duckwings. These were the five most common winning colours that have the most beaten the common willow-legged Black-breasted Reds, which, with Blacks, were considered losing colours, and so were most other colours, with some exceptional strains. The north country hen-tailed cocks were often fought in the "byes."

Mains of cocks were generally of three descriptions—first, the royal main, or main royal of twenty-one cocks on each side, or forty-two cocks in all; second, the main of fifteen cocks on each side, or thirty birds in all; and thirdly, the main of seven cocks on each side, or fourteen birds in all, which

was, perhaps, the most common, and consisted of the most select birds. There was the Welsh main, also, of sixteen cocks in all, the eight survivors pitted again, four against four, and again two against two, and the two survivors again, one against one. Thus the winning cock had to win four battles. This was of course the hardest sort of fighting of all, and only really good hard birds like Brown Reds and Dark Greys could generally win Welsh mains, but the hen-tailed cocks did sometimes win them. In the royal mains some splendid Brown Reds used to be seen, this bird being the acknowledged favourite colour of almost all sporting gentlemen, and for the pit the most cultivated of any colour—in most localities at any rate.—NEWMARKET.

ENTRIES IN VARIETY CLASS.

I WANT the opinion of yourself and my fellow exhibitors as to entries in the variety class, and although a personal matter, yet as the case is one much in point, I state it.

At the Falmouth Bath and West of England Meeting, of which you gave a report last week, I received a high commendation in the "Any variety" class for Malays, White Spanish receiving a prize, whilst there was a class for Spanish without any limitation of colour. Query, Were the White Spanish wrongly entered? and if so, ought they not properly to have been disqualified?

At Weston-super-Mare Show, I think—if not there, at Clifton—a pen of Black Cochins chickens, remarkably good, took the first prize, I believe, in the "Any other variety" class. Now, many remarked that these birds ought to have been disqualified, because there was a class for "Cochin chickens."

There was at Falmouth, and there is at most shows, a regulation directing that "wrongly entered" fowls will be disqualified.

As there were other highly commended pens, I do not say that but for this award I should have taken a prize; my position might have been just the same, only I think the point ought to be settled.—Y. B. A. Z.

[As there was a class for "Spanish without any limitation of colour," we think, if strictly followed, the "White Spanish" ought to have been in that class, but we do not think that in practice such strictness is ever admitted. When Spanish fowls are spoken of, everyone understands that the normal Black Spanish are meant. White Spanish and Andalusians are varieties of the same breed, and properly admitted to the "variety class." To prevent any misapprehension, Committees would do wisely to specify in their prize lists the class as being for "Black Spanish."—EDS.]

THIS SEASON'S HATCHING.

When hatched.		No. set.	No. hatched.
March 2nd.	Brahma	11	8
" 16th	White Cochins	11	5
April 6th	Brahma and White Cochins	13	12
" 14th	Brahma and White Cochins	13	9
" 24th	Brahma	13	12
" 27th	Brahma and White Cochins	15	13
" 27th	Brahma and White Cochins	15	12
May 4th	Brahma	13	12
" 8th	Brahma and White Cochins	15	13
" 8th	Black Hamburg	13	11

The Black Hamburg eggs were bought, but all the others were from my own hens, which had their nests on the ground, with a good turf underneath. The chickens were all fine, healthy birds, and have done remarkably well. I have lost two of them by cramp among the first hatchings, and one in another

by accident. They have a good run in a farmyard, and I feed them on rice, barley, crushed oats, millet, and boiled potatoes.—W. BIRCH, *Barnack*.

BEDLINGTON POULTRY SHOW.

THE fourth annual Show of the Bedlington Society was held on the 2nd and 3rd inst., in a large marquee erected in a field belonging to the Secretary, Mr. Robert Swann, and met with much encouragement and support from the gentry and agriculturists in the district. The quality of the birds shown was of a very superior kind, and some really fine ornithological specimens were exhibited. James Dixon, Esq., of Bradford, officiated as Judge of poultry, and declared the thirty-five pens of *Game* contained some of the finest fowls he had seen. The *Brahmas* were also well represented; Mr. Shorthose, of Hartford, showing three pens of birds which were very perfect in breed, though somewhat too young to compete with others of greater maturity. The prize pair in the *Cochin-China* class were fine birds, especially the cock, which excited much admiration and attention. The presence of a pair of Buff Poles in the Show—the first ever exhibited in the North of England, was noticed with much gratification and curiosity by the bird fanciers.

The show of *Pigeons* was an indifferent one, and not so good as last year's, when the prizes offered for competition were considerably less. Mr. J. Shorthose, of Hartford Bridge, and Mr. Robinson, of Sunderland, judged the Pigeons.

There were only five hatches of *Rabbits*, but these contained noble animals, and were an attractive feature in the Show.

The arrangements were most complete, and reflected credit on the Managing Committee, and Mr. R. Swann, the Secretary. The miners in the district take much interest in breeding the finer specimens of poultry, and it was pleasant to see them take such a high position in the Show. The following is the prize list:—

GAME (Any variety).—Cock.—First, J. Achinglass, Barrington Colliery. Second, J. Brough, Carlisle. Third, M. Mervot, Bebside. Highly Commended, W. Ramsay, West Cramlington (Black Red); R. Sharpe, Bebside. **GAME (Black-breasted and other Reds).**—First, J. Mason, Worcester. Second, J. Brough. Third, G. Armstrong, Netherton. Highly Commended, H. M. Jullian, Hull; E. Rutherford, Bedlington Colliery. Commended, E. Sharpe.

GAME (Duckwings and other Greys).—First, J. Mason. Second, J. Brough. Third, H. M. Jullian. Highly Commended, J. Jones, Bebside; Rev. J. G. Milner, Bellerby, Yorkshire.

GAME (Any other variety).—First, J. Brough (Lemon Piles). Second, T. Davison, Netherton (White). Third, W. Drysdale, New Delaval (Piles). **DORKINGS.**—First, H. Pickles, jun., Earby. Second, J. Shorthose, Hartford Bridge Cottage. Third, Mrs. Seamons, Aylesbury. Highly Commended, T. Bell, Cramlington.

COCHIN-CHINA.—First, W. A. Taylor, Manchester. Second, J. Shorthose. Third, T. Fenwick, Netherton. Commended, R. Hine, Bedlington. **BRAHMA FOOTRAS.**—First, E. Leech, Rochdale. Second, J. Shorthose. Third, J. Anderson, Seghill. Highly Commended, J. Scott, Netherton; W. Swann, Whinney Hill, Choppington. Commended, J. Shorthose.

SPANISH.—First, T. J. Harrison, Singleton Park. Second, J. Stalker, West Sleekburn. Third, Messrs. Bowman & Fearon, Whitehaven.

POLISH (Any variety).—First, Mrs. E. Proctor, Hull. Second, S. S. Mossop, Long Sutton (Buff). Third, R. Parsons, Sleekburn Cottage (White-crested). Commended, G. F. Allan, Sunderland (White-crested).

HAMBURGS (Golden-spangled).—First, W. A. Taylor, Manchester. Second, H. Pickles, jun. Third, R. Swann, Morpeth. Highly Commended, G. Johnson, Barrington Colliery. Commended, W. Whitfield, Hetton-le-Hole; H. Pickles, jun.

HAMBURGS (Silver-spangled).—First and Third, H. Pickles, jun. Second, W. Hall, West Sleekburn. Commended, J. Howe, Cowpen; C. Armstrong.

HAMBURGS (Gold-pencilled).—First and Second, H. Pickles, jun. Third, Messrs. Bowman & Fearon.

HAMBURGS (Silver-pencilled).—First and Second, H. Pickles, jun. Third, R. Huntley, Glebe Farm, Bedlington. Commended, W. Whitfield.

BAIRDOR FOWLS.—First, W. Swann. Second, T. Roddam, Hetton-le-Hole. Third, Miss Robinson, Stannington East Farm.

GUINEA FOWLS.—First, J. Swann. Second, T. C. Harrison, Hull. Third, Miss Robinson.

ANY OTHER DISTINCT VARIETY NOT PREVIOUSLY MENTIONED, EXCEPT BANTAMS.—First, R. Draper, Seaham (Malays). Second, Rev. J. G. Milner, Bellerby, Yorkshire (Houdan). Third, G. M. Evers, Seaton Sluice.

GAME BANTAMS (Black-breasted and other Reds).—First, J. L. Robinson. Second and Third, J. Douglass, New Delaval. Highly Commended, E. Powell, Knutsborough; T. Clark, Sunderland; P. E. Scofield, Morpeth; Messrs. Bowman & Fearon; W. Hodgson, Darlington; J. Harvey, Jedburgh.

GAME BANTAMS (Any other variety).—First, W. Dixon, Sunderland (Duckwings). Second, T. C. Harrison, Hull. Third, H. Sharp (Duckwings).

BANTAMS (Any other variety except Game).—First, J. R. Robinson, Sunderland (Black Rose-comb). Second, W. A. Taylor, Manchester. Third, T. C. Harrison. Highly Commended, Akroyd & Scott, Sunderland (Silver-laced Sebrights). Commended, W. Dixon (Black Rose-comb); J. Robson, Bebside.

DUCKS (Aylesbury).—First and Second, Mrs. Seamons. Third, J. Swann, Bedlington.

DUCKS (Rouen).—First, E. Leech, Rochdale. Second, Rev. J. G. Milner, Bellerby, Yorkshire. Third, Mrs. Brown, Bebside Farm.

DUCKS (Any other variety).—Second, J. Fairless, Wideopen (Buenos Ayres).

COTTAGERS (Any variety).—First, J. Aisbitt, Bedlington Colliery (Black Red Game). Second, J. Stalker, West Sleekburn (Spanish). Third, E. Rutherford, Bedlington Colliery (Black Red Game).

SELLING CLASS.—First, G. Taylor, Bedlington Colliery (Duckwing

Game). Second, J. Achinglass, Barrington Colliery (Golden-spangled Hamburgs). Third, P. Wilkinson, Bedlington (Game). **TURKEYS.**—First, E. Leech. Second, Miss Robson, Dinington.

PIGEONS.

CARRIERS.—First, John Thompson, Wideopen, near Newcastle. Second, H. Yardley, Birmingham. **TRUMPERS (Almond).**—First, John Thompson. Second, H. Simpson, North Seaton.

TRUMPERS (Any variety).—First, Jesse Thompson, Bingley (Yellow Mottled). Second, H. Yardley. Highly Commended, John Thompson.

CHOPPERS.—First, H. Yardley. Second, John Thompson.

TURBITS.—First, J. Clark, Thirsk. Second and Highly Commended, Jesse Thompson.

OWLS.—First, J. Clark, Thirsk (White African). Second, H. Simpson.

JACOBS.—First, R. S. Bell, Hull. Second, J. Girdley, East Hartford.

FAN-TAILS.—First, H. Yardley. Second, J. Girdley.

ANY OTHER VARIETY NOT PREVIOUSLY MENTIONED.—First, H. Yardley. Second, Jesse Thompson. Highly Commended, W. Whitfield, Hetton-le-Hole (Trumpeters); H. Yardley.

SELLING CLASS.—First, Jesse Thompson. Second, T. W. Crozier, Hirst, Woodhorn (Jacobsins).

RABBITS.

LONG-EARED.—First, W. Neal, York. Second, T. Gordon, North Seaton.

ANY OTHER VARIETY.—First, W. Neal. Second, A. H. Easton, Hull (Silver Grey).

THE SHEFFIELD ORIGINAL FANCY RABBIT SOCIETY'S SHOW.

THE half-yearly Show was held on June 1st and 2nd at the Inkerman Tavern, Alma Street. The Show was larger and better than any of the previous ones. A valuable collection of Canaries exhibited by Messrs. W. Mauley, W. Smith, W. Martin, and J. Leigh, considerably added to its attraction. The following Rabbits took prizes in their respective classes:—

LENGTH OF EARS.—First, — Allison, grey buck. Length of ears, 23 inches; width, 5½ inches. Age, 8 months 3 days. Second, — Mangham, grey doe. Length of ears, 21½ inches; width, 5 inches. Age, 4 months 3 days. Third, — Carr, smut doe. Length of ears, 21 inches; width, 5 inches. Age, 5 months 3 days.

BLACK AND WHITE.—First, — Allison, doe. Length of ears, 21½ inches; width, 5½ inches. Weight, 6 lbs. 7 ozs. Age, 5 months 29 days. Second, — Nicholson, doe. Length of ears, 20 inches; width, 4½ inches. Weight, 7 lbs. 7 ozs. Age, 4 months 23 days.

BLUE AND WHITE.—First, — Allison, buck. Length of ears, 20½ inches; width, 4½ inches. Weight, 4 lbs. 7 ozs. Age, 2 months 24 days. Second, — Frith, buck. Length of ears, 20½ inches; width, 4½ inches. Weight, 5 lbs. 5 ozs. Age, 2 months 26 days.

GREY AND WHITE.—First, — Lindley, doe. Length of ears, 21½ inches; width, 5 inches. Weight, 7 lbs. 4 ozs. Age, 7 months 5 days. Second, — Falkner, doe. Length of ears, 20½ inches; width, 4½ inches. Weight, 5 lbs. 7 ozs. Age, 4 months 3 days.

YELLOW AND WHITE.—First, — Leigh, doe. Length of ears, 20½ inches; width, 4½ inches. Weight, 5 lbs. 10 ozs. Age, 4 months 9 days. Second, — Leigh, buck. Length of ears, 20½ inches; width, 4½ inches. Weight, 5 lbs. 3 ozs. Age, 4 months 23 days.

TORTOISESHELL.—First, — Mangham, buck. Length of ears, 22 inches; width, 4½ inches. Weight, 6 lbs. Age, 4 months 9 days. Second, — Nicholson, doe. Length of ears, 20½ inches; width, 5 inches. Weight, 7 lbs. Age, 4 months 23 days.

SELF-COLOUR.—First, — Lindley, yellow buck. Length of ears, 21½ inches; width, 5½ inches. Weight, 7 lbs. 4 ozs. Age, 7 months 5 days. Second, — Mangham, yellow doe. Length of ears, 21½ inches; width, 4½ inches. Weight, 6 lbs. 5 ozs. Age, 4 months 3 days.

WRENT.—First, — Moore, brown and white buck. Weight, 7 lbs. 6 ozs. Age, 7 months 5 days. Second, — Carr, smut doe. Weight, 7 lbs. 2 ozs. Age, 5 months 3 days.

—GEORGE LINDLEY, *Hon. Sec.*

BREEDING NORWICH CANARIES.

IN reply to your correspondent "T. C. C.," my own practice is that detailed in "The Guide." When my young birds are able to shift for themselves I transfer them to a large flight cage. I usually allow them to remain in an intermediate cage with the cock during the time the hen is sitting on her next nest, and then keep them by themselves until another lot of young ones is ready to displace them, when they are removed to the flight, being by this time fully able to attend to their own wants.

While in the intermediate cage I give the birds now and then a little soft food, gradually decreasing the supply, and when they take up their abode in the flight they receive nothing but hard seed and green food. Here they remain till they show signs of moulting. Being, however, of a rather pugnacious disposition, quite at variance with the ideas of their amiable character which we learned in the nursery rhymes of our youth, they do not always agree, but "fall out, and chide, and fight," and like children of larger growth, are very apt in their quarrels to tear the clothes from each other's backs in a most unfeeling manner. One or more birds are sure to come off losers in these squabbles, and as soon as any one of them begins to assume a ragged appearance, each of his companions will take a pleasure in assisting him down-hill, seldom passing

him without giving him a kick in the shape of a pluck at his feathers, which, as often as they are replaced by a rapid and more handsome growth, continue to fall victims to the depraved appetites of his persecutors. An hour or two is amply sufficient to lay bare the back of a bird, if the attacking party make good use of their time, which, rely on it, they will do. When you notice a bird moving along the perch in a quiet, easy, off-hand sort of way, making for a place next to some unsuspecting, plump, well-feathered individual, who, possibly, has taken up his quarters next the wall to protect at least one side, be sure that gentleman has an eye to business of a fraudulent kind, and the way in which he will help himself to a few feathers from his neighbour's coat is the perfection of cool impudence. The quill end of these he will nibble with infinite satisfaction, and if they be young and contain a little blood, so much the better, and the more delicious they will be. There is generally a ringleader in these games, and the best plan is to remove him, and such as appear likely to become victims to his bad example, to separate cages, when the remaining birds will most likely conduct themselves decently.

I think that birds moult better, and on the whole do better in all respects (especially show birds), when confined separately, though Mr. Walter, of Winchester, one of our most noted exhibitors, who always brings his birds out in the bloom of high condition, assures me that he moults a number, say twenty, together. I do this myself with ordinary birds, but those which show promise of becoming stars of greater or less magnitude, I prefer to separate. My young birds all receive the same treatment as regards food, &c., whether intended for exhibition or not—indeed, I do not see how you can well determine what are fit for show and what are not till they are moulted, since some apparently promising birds disappoint one, while others of less pretentious appearance turn out gems of the first water.

We labour under great disadvantages here in the north in our large manufacturing towns as regards moulting Canaries. Iron works, spelter works, gas works, chemical works, glass works, and bottle cones, with huge chimneys continually pouring out dense volumes of smoke, are not in a general way very conducive to a clear atmosphere; and while our southern friends can keep their birds an entire season almost as clean as when fresh moulted, ours in an incredibly short season become like little sweeps. To guard against this we are obliged to have recourse to various expedients to keep them clean, covering them up with sheets and other appliances, in spite of which they will get dirty. A friend of mine uses cages with glass fronts and small ventilators, but the everlasting smoke creeps in through the smallest crevice and tarnishes the gilding of our gems.

One thing is essential as a means of inducing a high colour, and that is keeping the birds from the light. As soon as they begin to strike out new feathers cover them up immediately. If they are in separate cages cover the front with brown paper, leaving only sufficient light at the bottom to admit of the birds seeing their seed and water, or darken the window. Under any circumstances exclude the light, cover up from dust and smoke, feed high, and you may expect good results.

There are not many men, except a few of the Norwich and Derby schools, who can bring out a Norwich bird in his glory. I have conversed with many on the subject, and find that opinions as to mode of treatment differ widely. Some prescribe one thing and some another; but the above treatment and a skilful application of soap and water will bring a bird out fit to meet all comers, provided only that the quality is there to begin with. I should recommend beginners to try Crested Norwich. In the first place they are very beautiful birds, are rapidly rising to a very high place in public estimation, and the chances of obtaining prizes with them are much greater than with clear birds, since the points requisite to constitute a first-class bird are distributed over a larger area. It is true that the classes for these birds have hitherto been somewhat circumscribed at many of our great shows, but I see no reason why that should not be remedied.—W. A. BLAESTON.

STRONG VERSUS WEAK SWARMS.

I HAVE read with considerable interest the paper under the above heading in page 415, and shall be glad to learn how it is that Mr. Mitchell, of Abington, manages to obtain glasses of honey of 70 or 80 lbs. weight without bee bread or larvae. I find in my own practice that it is difficult to obtain supers of

6 or 8 lbs. without brood and bee bread; and any information which would enable me to come at all near Mr. Mitchell's results would be gladly received.

Of the advantages of strong swarms over weak ones I have long been convinced, and generally (in the case of second swarms universally), I pin two and sometimes three together in the manner advised by Mr. Taylor in the various editions of his "Bee-keeper's Manual" (page 193 of the last edition). This plan applies to the common cottage hive. With improved systems I have had little or no experience, except with Nutt's collateral hives, but I could not prevent swarming, nor brood in the side boxes, and gave up the plan. I shall be exceedingly glad to be taught a system which will prevent swarming, and give me 60 or 80 lbs. of pure honey from each hive.

I learned from a neighbour how great are the advantages of strong swarms. He said he knew a man who kept bees, and who had two hives which swarmed at the same time in May, and united. Chancing to have a very large hive, he shook them into it, and the season being a remarkably fine one, the bees filled the hive in eight days to such an extent that the new combs were not able to sustain the weight of the honey, and broke down, and he had to drive the bees into a new hive; but in those eight days they had gathered such a store that he obtained 60 lbs. of clear honey from the hive besides what was wasted by the breaking down of the combs. This seems to be a marvellous story, but I have no other reason to doubt the truth of my informant.

I think the advantages of strong swarms are self-evident. Suppose it requires five thousand bees to keep up the temperature of a hive to the point necessary to secure the health, and progress of the brood in the combs, and that the swarm is a second or third swarm consisting, say, of seven thousand bees, there are then, according to supposition, only two thousand to carry on the work of the hive; but suppose we add another swarm of six thousand to this hive, there will then be the five thousand to keep up the temperature and carry on the internal work of the hive, and eight thousand for outdoor labour, or four times as many workers in one case than there are in the other.—T. G.

RAISING QUEENS.

IN forming the nuclei to raise queens, given in THE JOURNAL OF HORTICULTURE of April, 1867, it is said, "All this must not, however, be left to chance." I have twice failed this spring, the bees would not start royal cells. In that case what am I to do with the nucleus? Are the spare combs to be empty ones or full, that are placed on either side?—J. R. F.

[The passage which you quote refers to the number of bees remaining in the nucleus, which if insufficient should be recruited in the manner described afterwards. When the brood comb is well covered with bees, they scarcely ever fail sooner or later to start royal cells. Should they, however, neglect doing so until the whole of the brood in the comb is sealed over, it should first have all the bees brushed off it, and then be exchanged for another comb containing brood in all stages, which with the adhering bees should be put in its place, and on this queen cells are pretty sure to appear. In certain rare cases the expected production of royal cells may be frustrated by the presence of fertile workers, whose existence is evidenced by the appearance of new-laid eggs in the cells. The presence of these abnormal creatures throws so many difficulties in the way of queen-rearing, that when once their existence is ascertained it is better to start another nucleus rather than lose time in persevering.]

The spare combs are better if either wholly or partially filled with honey. When they are empty, feeding often becomes necessary to save the embryo colony from starvation.]

SILKWORM-REARING IN ENGLAND.—No. 11.

Third Period and Sleep.—At the completion of this period the worms will occupy about 80 feet of space on the stages. From 90 to 100 lbs. of leaves, not somewhat larger than during the two previous periods, will be required. The worms having been transferred to their fresh papers, or calico if the latter be used, are again fed every five hours. The wooden trays will now begin to be required for transporting the papers of worms from one stage to another, as also the steps or ladders to reach the upper stages.

The consumption of leaves on the first and second days will be about 30 lbs.; on the third and fourth, 40 lbs.; on the fifth, sixth, and seventh, 30 lbs. On the fifth day the removal to fresh papers, and the clearance of the dirt, refuse, &c., must be attended to. To facilitate this work the finer nets may be used; they can be laid over the worms and the leaves supplied by their help. When the worms have all passed through the meshes of the nets to the leaves, the nets can be raised and secured to the stage above by means of small hooks, while the space below is cleaned and arranged with fresh papers, after which the worms are lowered, or some can be transported on the trays to fresh compartments if necessary.

Maintain the temperature at 70°, and keep the air of the room pure by ventilation. Fresh air is life to silkworms, and it cannot be shut out entirely from them without injury. The ventilators should be opened more or less according as the external temperature admits. Sometimes the door may be opened, and in fine, warm, calm days the windows as well. In damp weather, a flame produced by burning straw, shavings, &c., on the hearth will be beneficial, by promoting a change or movement of air in the rearing room.

It is not imperative to use the nets now, or, indeed, at all for the quantity of worms of which I am speaking, but the advantages arising from their use become more manifest in larger rearings. Many persons use no nets until the worms are near the fourth sleep.

Fourth Period and Sleep.—At the end of this period 200 feet of space, more or less, are required, and from 200 to 250 lbs. of leaves, which do not require to be cut before being given to the worms. The day after the third sleep the change of papers and removal of excrements, refuse, &c., must take place as before. This must never be neglected, for the accumulation of a bed of dirt under the insects is most prejudicial. This period lasting seven days, it will be advantageous to perform this operation three times. The consumption of leaves during the first and second days will be about 50 lbs.; on the third and fourth days 100 lbs.; on the fifth, sixth, and seventh days it again decreases to 50 lbs.

During this period gathering the leaves, feeding the worms, and cleaning them will occupy the entire time of two women. It would be well to have the assistance of two extra ones to give the worms their last meal at night, or first one in the morning. Attend to the temperature and the ventilation by opening the ventilators more or less. If the weather is sufficiently fine during the day, open the door and windows. The fourth sleep lasts somewhat longer than the preceding ones, and it is also the most difficult. While it lasts the temperature should not be allowed to fall below 70°, night or day.

Fifth Period, and last before spinning.—This is the most difficult period, for the rearer has to contend against a large amount of watery vapour every day transpired by the insects and evaporated from the leaves, likewise the putrid emanations from the excrements, which much increase. The thermometer and odour in the room must serve to indicate when more ventilation is needed. At the completion of this fifth period, occupying about ten days, from 450 to 500 feet of space will be necessary on all the stages, excepting the top one of each castle, and altogether from 1500 to 1600 lbs. of uncut leaves to be distributed in abundant meals, almost covering the worms from sight, every five hours. The day after the fourth sleep clear away the excrements and provide fresh space, repeating the same care every three days at least. In this period the worms eat voraciously, grow fast, and, of course, their excrements increase in proportion; therefore, do not neglect cleanliness and ventilation. During the first two days about 100 lbs. of leaves are necessary, during the following two, 250; in the next two, 400; in the next, 400; and in the last two something under 200 lbs. When the worms consume their meal within an hour and a half, a fresh one should be given, or what I will term an intermediate meal. This is also necessary during any of the preceding periods.

During the whole time the ventilators should be continually open, or partially so, and fire heat must maintain the temperature at as near 70° as possible. It is never necessary to exceed this degree, nor is it advisable to let it fall below 60°. Sometimes from variations of temperature or other causes, this period is prolonged one, two, or more days, as in the case of the preceding periods, but the maturity of the worms is very evident, for many may be seen crawling over the leaves without eating, as though seeking for some retreat, and many will be directing themselves to the edges of the tables or stages. They appear transparent when looked at

against the light; silk is seen issuing from their mouths over the leaves; the rings round their bodies contract, the skin about their heads becomes crisp, and they evacuate soft greenish matter.—LEONARD HARMAN, JUN.

OUR LETTER BOX.

HASTENING MOULTING (W. H. R.).—Hempseed will precipitate the operation of moulting by destroying all life in the old plumage. Canary seed will cause the feathers to fall off. That, however, which causes the loss of the old feathers is sometimes anything but favourable to the new. The heat of the hempseed and the relaxing properties of the canary do not favour growth. This is one of those cases in which we believe Nature unassisted will do well; but endeavours to forestall or to retard her operations end in failure.

MOISTENING EGGS WHILE HATCHING (St. Edmunds).—The water used for moistening eggs may be cold. The process is a base imitation of Nature. The hen of any sort leaves her eggs in the morning while the grass drips with dew; she remains searching for her food till her breast feathers are quite saturated with the cold dew water. She does not even shake herself, but sits down on her eggs. We believe that in five out of six cases the failure of eggs is from the neglect of dampings.

GEESSE SUFFERING FROM WEAKNESS (Idem).—Your Geese are suffering from weakness caused by insufficient or improper feeding, or from being shut up in a floored house at night. If they are shut up in a place where there is stone, brick, or wooden flooring, goslings would suffer as you say yours do. Feed on oats, oatmeal, bran, and gravel, mixed in a trough with water, and let them roost where they stand on bare earth.

PIGEONS NOT SITTING (Idem).—Mate your Pigeons afresh, dividing the pair that neglects its important duty.

FOOD REQUIRED BY FOWLS (T. T.).—We are unable to answer your question properly. To enable us to do so, you should describe the run and the accidental food the birds obtain. At this time of year, when the earth teems with vegetation, there are many things fowls find that are better for them than corn. Where thrashing is going on, or where many horses are kept, and the birds have access to the yard, they find helps that should diminish the consumption of corn. If your fowls have nothing but that which is given to them, and you give them nothing but corn, each fowl must have two "grasp" handfuls daily. We, however, repeat that which we have often said, you must be guided by circumstances.

HULL POULTRY SHOW.—The first prize for Coloured Dorkings at this Show was awarded to Mr. John White, of Warlaby, and not to Mr. Robson, of Louth.

THE BLACK-BREADED RED COCK, first at Birmingham in 1867, mentioned by "NEWMARKET" on May 21st, is not of Sir St. G. Gore's strain. The bird was only his property, and is now in my possession.—WILLIAM H. WHEELER, Carlton, near Nottingham.

INSECTS IN POULTRY HOUSE (Subscriber, Faversham).—They are one of the Acari or mites. Limewash the interior of the house, adding half a pound of flowers of sulphur to a bucketful of the limewash.

PADJAN FOWLS (J. E.).—The following is their description as given in the "Poultry Keeper's Manual." Size and shape of medium Dorkings; legs short and white; cock's hackle and saddle feathers bright orange; back and wings dark red; breast chestnut, green iridescence on wings; tail a rich greenish black; comb single. Hen's breast chestnut or fawn-coloured; hackle golden, edged with brown; back and wings brown in shades, each feather marked like those of the Partridge. Excellent layers and sitters; good table birds; eggs average size; shell dark cream-coloured.

FOWLS EATING FEATHERS (L. P. E.).—Where fowls take to eating feathers, or picking each other's flesh, it is a sure sign they are in a very pampered or diseased state. Purge them well with castor oil, a table-spoonful at a time; give them lettuce to eat; feed sparingly, and let the food be ground only. Let them have dust in their house, and rub the spots bare of feathers with compound sulphur ointment. They should have no food by them at any time, and be sparingly served at each meal. They do not eat each other or their feathers because they are hungry, but because they are suffering from a vitiated appetite.

REMOVING A HIVE TO A BEE HOUSE (Chatham).—We should transfer the hive from its bracket to some kind of moveable support, and then shift it little by little very gradually, until it reaches the bee house about 20 yards off.

PRESERVING PEAS (E. A. S.).—They may be preserved until the next spring if some of the summer crop are treated as follows:—"Pick them when full grown, shell them, dry them gently but thoroughly, and then store them in canvas bags in a dry place. When required for use soak them in water for a few hours until plumped up, and then boil them." The following mode has been reported to us by a person well qualified to judge of such matters as being very successful:—"Carefully shell the Peas, then put them in tin canisters, not too large ones; put in a small piece of alum, about the size of a horsebean, to a pint of Peas. When the canister is full of Peas fill up the interstices with water, and solder on the lid perfectly air-tight, and boil the canister for about twenty minutes; then remove them to a cool place, and they will be found in January but little inferior to fresh, newly-gathered Peas. Bottling is not so good—at least, we have not found it so; the air gets in, the liquid turns sour, and the Peas acquire a bad taste."

POULTRY MARKET.—JUNE 10.

THERE are indications of a better supply, and trade has somewhat improved.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	4	6	5	0	Pheasants	0	0	0	0
Smaller do.....	4	0	4	6	Partridges	0	0	0	0
Chickens	2	6	3	0	Guinea Fowls	0	0	0	0
Goslings.....	6	0	6	6	Hares.....	0	0	0	0
Ducklings.....	6	6	4	0	Rabbits.....	1	5	1	6
Pigeons	0	0	0	9	Wild do.....	0	8	0	9

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 18—24, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun	Day of Year
			Day.	Night	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
18	Th	Royal Botanic Society's Show closes.	72.1	59.0	61.1	21	45	af 3	17	af 3	32	af 2	36	af 5	27	0 52	170
19	F	(Meeting of Linnean Society.	70.8	48.9	59.9	22	45	3	17	8	11	3	47	6	28	1 5	171
20	S	Crystal Palace Rose Show.	72.3	49.2	60.7	19	45	3	17	8	58	3	55	7	29	1 34	172
21	Sun	2 SUNDAY AFTER TRINITY.	71.5	48.3	60.8	17	45	3	17	8	55	4	51	8	1	1 31	173
22	M	Meeting of Royal Geographical Society.	73.7	50.0	61.8	16	46	3	18	8	2	6	45	9	2	1 44	174
23	Tu		73.6	47.3	59.9	16	46	3	18	8	15	7	26	10	3	1 57	175
24	W	Meet. of Royal Agricultural Society and Annual Gen. Meet. of Society of Arts.	73.7	49.1	61.4	15	46	3	18	8	34	8	0	11	4	2 10	176

From observations taken near London during the last forty-one years, the average day temperature of the week is 72.8°; and its night temperature 49.4°. The greatest heat was 93°, on the 19th and 22nd, 1846; and the lowest cold 33°, on the 20th, 1865. The greatest fall of rain was 0.84 inch.

SUGGESTIONS AS TO THE CAUSES AND PREVENTION OF LICHENS ON FRUIT TREES.

SOME time ago a correspondent called attention to what threatened to prove a serious evil both to fruit and forest trees—namely, their becoming covered with a lichen of a light grey colour. This, he stated, had been much on the increase of late years, and fears were entertained that the growth of young trees would be completely arrested, and that premature old age would set in; he asked what could be done to check the mischief, and whether its increase had been noticed in other localities as well as that he wrote from. These and similar questions are fitting subjects for inquiry in the pages of this Journal, and as the evil exists to a serious extent here (Kent), I venture to make some remarks on the causes which appear to favour the growth of lichen, and to offer a few conjectures as to its prevention.

The evil is not a new one, for moss-grown trees have probably existed ever since trees arrived at an advanced age; but it is quite possible that many trees now become covered with moss at an earlier age than in former years, and that they are much affected by it in localities where at one time it was comparatively rare. It is certain that the moss interferes with the healthy action, and checks the due development of the plant supporting it, while it no doubt hastens the death of the more aged specimen; still its growth and progress seem to be dependant on causes difficult to comprehend, as trees occupying widely different positions are often alike affected, so that some other cause than locality must be sought for.

Happening to be travelling in the western part of Lancashire lately, I had an opportunity of looking over some orchards of Apple and other trees at different places, and although the climate is proverbially moist, and few fields or enclosures were without water in a ditch, stream, or pond, the trees were comparatively free from moss or lichen; while at a very short distance from the place whence I write trees of the same description are covered with it, although water could only be obtained by digging down 100 feet or more, and, the situation being elevated, the air may also be said to be dry. Now, here is a strong argument against moisture being the cause; but I feel convinced as regards the Lancashire trees that, besides its presence, another cause kept the parasite at bay, and I believe that the strong sea breeze had much to do with its absence. In the case of the correspondent referred to, I am inclined to believe that the want of moisture, or at least of a sufficient quantity of it, caused his trees to be so overgrown with lichen, and one of the most likely theories would seem to be that the soil and climate (for both may be in fault), were not favourable to the Apple growing with sufficient vigour to resist the attacks of this parasite; or, shall we say that the climate and other things favoured its growth more than that of the stock which supported it? One or other of these causes must have been at work; but let us examine the matter still further, and

take a third place into consideration, and this is one where the lichen was also absent, and in a position where the tree was in anything rather than a healthy condition, but it may, perhaps, give us some insight into the causes which encourage the production of lichen and moss on trees.

Having an opportunity of looking at the condition of some Apple and other fruit trees, as well as of forest trees and shrubs growing in the suburbs of a large manufacturing city, I failed to discover a particle of moss, although the trees and shrubs could not be called healthy, and, in fact, were encrusted in soot as thick, probably, as the bark that covered them. Here the case was plain enough, the tree could drag on an existence in spite of the soot, but the moss could not, the impurities of the atmosphere were fatal to it; hence its non-appearance. I will not say that its dirty substitute is not the worse evil of the two.

Let us now examine the causes which contribute to the production of lichen, and on considering the three cases which I have given it would appear that a clear pure atmosphere free from saline or smoky matters tends to encourage it, and I am inclined to think that both an excess and deficiency of moisture are also favourable to it. I am not in a position to affirm this with certainty as regards living objects, but as to those which are not so, I will observe that the park here is surrounded by a close oak paling about 6 feet high. The palings being left and standing upright last a great many years, and I have often pointed them out to painters as a proof that their so-called preservative mixtures failed to keep any description of outside timber work so long as these slender strips which had no such covering. The Silver Moss, as it is commonly called, has more or less covered these palings just as it did the branches of Apple and other trees, and on a portion of the fence which passes through some damp clayey ground overhung by trees, the moss exists in greater abundance than where the fence is on high or open ground. This may be easily accounted for. A stagnant atmosphere, whether moist or dry, is in general favourable to the growth of lichens, but more so when the air is moist; and this leads me to think that the moss is as much indebted to the atmosphere for an existence as to the body it is growing on, as in the case of the oak palings, which in some instances are densely covered with a thick beard $1\frac{1}{2}$ inch long, the support it can receive from the wood must be very small; for although the moss probably to some extent hastens the decay of the oak, this lasts so many years as to prove that the amount of its substance which it has given to vegetation must have been very small. Possibly the destruction of the wood may have been counterbalanced in some degree by the preservative effect which a clayey soil is said to have on Oak timber. Posts of it fixed in the ground are said to stand longer in a clayey soil than in a dry sandy or gravelly one. As palings densely covered with this lichen will last a great many years, I imagine that the lichen is as much indebted to the atmosphere for its existence as to the wood on which it is growing, and that its presence on Apple trees is, after all, not so detrimental as might be supposed. We ought not, however, to be satisfied with this solution, as there can hardly be a doubt that a healthy tree, without

lichen is better than one with it, for although it may not take more food from the growing tree than it does from the inert oak post or paling, it must take some, and where the trees are growing on a high and dry situation, and the atmosphere affords the lichen less food, it most likely supplies the deficiency from the juices of the tree. As a proof of this, the oak paling placed on the dry ground is in a great measure free from it, while the Apple trees there, which ought only to be in their prime, are covered to an extent which cannot be otherwise than injurious.

Assuming, therefore, that this parasite is more indebted for its existence to the atmosphere than to the material on which it is growing, let us see in what way we can account for its greater prevalence during the last few years than formerly. Here we enter the regions of conjecture, and in Kent I attribute this result to the greater amount of moisture we have had in the summer months for the last three seasons than in previous years (1863 so far is an exception); but our pasture and other crops have suffered less from drought in the last three summers than before that time, and probably the lichen has taken advantage of that, to make the formidable progress which it has done in some parts of the country. In Kent, however, I am not sure that it has increased so much as elsewhere. It has always been prevalent with us, and gives many of the orchards an unsightly appearance in winter, and a stranger would hardly suppose that such large leaves and good-sized fruit would follow in summer. The trees would, no doubt, be better without such a burden as the lichen is; but, strange to say, they thrive well under it, and trees fourteen or sixteen years old often become much infested with it, and are double the size of others lately pointed out to me in Lancashire that were free from the parasite: so much for climate. The soil in Lancashire I would account the better of the two; but along with the more rapid growth of the tree we have also that of the moss, and the prevention of the latter is one of those problems not easy to solve. A partial remedy, however, is often resorted to with considerable success, and its application is easy and inexpensive.

One of the cheapest of remedies for moulds and other low types of vegetation has been brought into use here; it is lime, the employment of which is not so general as it ought to be. Taking advantage of a mild moist morning in April, before the buds were so far swelled as to be sure of their not sustaining any injury, ladders were placed against the orchard trees, and men arrayed in garments suitable for the work scattered fresh-slaked lime amongst the twigs and branches; and this adhering to the moss in consequence of its being wet, killed or very much injured a considerable part of it, and soon afterwards it began to look brown and discoloured. Of course much of the lime falls on the ground as well as on the tree; but it will do no harm there and may do good, and the tree is much relieved of its incumbrance. It is also advisable in some cases to whitewash the bole and a portion of the branches; but if lime dustings be persevered in for a few years in succession, the moss will be kept down, and the trees have a better appearance. Some orchards, however, are so liable to moss, that it is difficult to keep it under; and where the expenditure is not certain to be returned by a commensurate increase of crop, the trees are allowed to take their chance. Many tenants of orchards spare nothing likely to improve their trees, and lime-washing and lime-dusting are commonly practised in the spring.

The remark has been generally made that moss has been more prevalent during the last few years than it used to be, trees being attacked at an earlier age, and older ones to a greater extent than was the case thirty or forty years ago. Possibly, as already suggested, three or four successive seasons may have been more than usually favourable to its growth, as we have not in these suffered from the want of water. Possibly these may be followed by a cycle of dry summers, and if we then find this lichen diminishing we may safely conclude that its greater abundance of late has been owing to the causes assigned. At the same time this affords no reason for neglecting the means of diminishing a covering which is not only injurious to the tree but unsightly, and the means pointed out is within the reach of all. Although I have mentioned it only in its application to fruit trees, there is no reason to doubt that forest trees operated on in the same way would be equally benefited.

In those districts where moss is troublesome it would be worth while to consult the returns of the rain during the past year, and if the quantity falling in the summer months has exceeded the average, the evil may be due to that cause.

A - it is well to try any means of destroying moss likely to

prove effectual, those whose fruit trees are much infected, and who may object to lime as being unpleasant to handle, may perhaps obtain good results by syringing with salt water in winter, taking care not to use it too strong, and not to apply it so freely as to injure the under crop if there is any. As an experiment I have tried this and recommend it to others, but I am not quite certain whether its utility in abating one evil is not counterbalanced by its injury to the land: while in the case of lime, which is used on scores of acres of orchards every year, its only objection is the unpleasantness of dusting it over the trees, and this is not so serious a matter if the time be judiciously chosen and the operator take his position to windward. He will, however, have to be above the branches, as the lime cannot well be thrown upwards; but a little practice will enable him to perform the work with less annoyance to himself than he expects at the beginning, and the trees will be grateful for the incumbrance removed from them.—J. ROBINSON.

THE PERFECTION OF TYPE IN STRAWBERRIES.

WHEN Mr. De Jonghe wrote his excellent article on the above subject (if I recollect right, in the columns of your contemporary, the *Gardeners' Chronicle*), I little thought that in three or four years I should be found following in the same direction.

It is now pretty generally known that for some time past I have devoted a considerable portion of my leisure hours to the cultivation of fruits, and of the Strawberry more particularly; and latterly I have devoted my time in pastures new—to the raising of seedlings, which accounts for my long silence and apparent abandonment of fragarian pursuits. My last communication to your valuable Journal was in commendation of *La Constante*, which sort appeared to me to have been unduly attacked at that time; and it was this great Strawberry, doubtless, which formed in Mr. De Jonghe's mind his *beau idéal* of perfection, when he wrote the article I have above alluded to.

It will be said by some who read this communication, "What do we want of so many kinds of Strawberry? There are Strawberries enough already to satisfy any reasonable person." This is quite true, and, doubtless, a great deal of trash may be thrown on the public in the way of seedlings, everybody thinking his own pet the best production. But what if a Strawberry as handsome or handsomer than *La Constante*, with perfection of form, colour, and flavour, and all the other requisites of fertility and hardihood can be produced so as to ripen some fortnight or so before that variety? I would fain believe, then, that I have accomplished that object: and having as far as I can judge from my point of view done so, I think it my duty not to hide my light under a bushel, but to tell my brother fragarians what I have achieved, how the matter came to pass, and what induced me to try my hand at this interesting and exciting subject.

I may say, then, that having cultivated first and last some three or four hundred varieties of the Strawberry, I am pretty well acquainted with the merits and characteristics of all the known leading sorts. Amongst many kinds which have from time to time been sent to me from various parts of the world to test, I received some five or six years ago an unnamed continental variety, which to this time has not received any further attention that I am aware of. I was struck by the beauty of the plant; but, alas! two or three years in succession the plant grew and multiplied, but only about one in a dozen plants bloomed, and that sparingly. At length I obtained one very beautiful berry, and I thought to myself, "If I could only render this sort fertile, I would not wish a finer or better Strawberry," but I got tired of planting year after year for no purpose. I accordingly sowed the seed of that same fruit in the autumn of 1865. The seedlings, about fifty in number, were picked out from the seedling bed in the next spring. In the following autumn the plants were removed to their fruiting bed, and I was both pleased and astonished to find that with only two or three exceptions all these seedlings were in due time fertile.

Four or five of them were of such merit when they fruited last year that I at once named them, and this year (having multiplied each sort as much as I possibly could), my anticipations have been more than realised. The remainder of the seedlings are still in the original bed, and, doubtless, many of them are also valuable; but the first five I dropped upon are so

excellent that it will be quite sufficient at present to describe the leading traits of these only.

No. 1 from its earliness and prolificacy I named *Early Prolific*. This variety has a bright green leaf distinctly dentated, and the plant is an excellent grower and of very elegant habit. I took forty plants from the parent, each runner having three or four plants, and all of which, large and small, bloomed so early that about one-third of the bloom was killed by the spring frosts, which with us this year have been intense and remarkably persistent, scarcely having subsided even now. These plants are now pictures of beauty, and have been giving ripe fruit from the 1st of the month. Fruit large, beautifully conical, and never gets out of shape, bright glossy crimson colour, getting a little darker when thoroughly ripe; seeds but slightly embedded; flesh pure white, with the narrowest possible margin of colour on section, firm throughout, juicy, and with a most delicate Pine flavour, which cannot fail to be appreciated by a connoisseur in Strawberries.

No. 2 I have named the *Duke of Edinburgh*. It may be observed that there is a sort of masculine and feminine character, so to speak, about the general habit of the Strawberry plant and its fruit, which leads one to name them accordingly, and this fine handsome fellow at once suggested to my mind the above name. Fruit large, and very large. I took twenty runners of this kind from the parent; for this and the following kinds happened, unfortunately, to be near a tree which robbed them of their powers, so that when I got this variety under full culture I have no doubt that the fruit will be classed as very large. Foliage bold and dark green, somewhat irregularly dentate, with long stiff leafstalks; leaves less numerous than in No. 1, and quite a contrast in colour and habit; fruit obovate, very handsome, with a perfect outline, and never departs from its normal shape, small reflected calyx, and glossy neck; in colour rather darker crimson than No. 1; seeds numerous and prominent; flesh white, but a duller white than No. 1; flavour piquant and excellent. Fruit now in full gathering, and has been ripe from the 5th inst., rapidly succeeding *Early Prolific*. Every plant, however small, is a bearer.

No. 3. I purpose to name this variety, if it turns out to my satisfaction as to size, *Madame Glode*, as a little compliment to my friend Mr. Glode, than whom there does not exist a more enthusiastic, enterprising fragarian, and whose geniality and kindness of disposition deserve a small tribute at my hands. Foliage of medium colour, with small regular serrations; plant neat and compact; fruit roundish and occasionally obovate, bright red; flesh pale red, solid, juicy, and of first-rate flavour; seeds numerous and prominent; size at present large medium, but as the plants have not had the benefit of good culture, I anticipate that the size will be ordinarily large.

No. 4 I propose to call *Sir Robert Napier*. Foliage bright green, with a yellowish tinge than No. 1; leaf firmer than that variety, and not quite so broadly serrated; fruit rather longer cone than *Early Prolific*, and occasionally slightly angular and flattened; calyx semi-reflected; seeds numerous, and decidedly prominent; flesh pinky white and sometimes pink, firm and juicy, with a piquant brisk aroma.

No. 5, *The Sultan*, in honour of His Majesty's visit to this country. Dark green foliage, and plant of similar habit to No. 2, but leafstalks shorter, and leaves not quite so dark as in that variety. Fruit large, obovate, and roundish, type as to shape not quite so perfect as in the *Duke*; colour dark crimson; seeds thickly disseminated and slightly depressed; flesh darkish red throughout, firm and juicy; flavour vinous and delicious.

The above five varieties it will be observed are totally distinct in almost every particular from each other, and none of them like the parent. They ripen in succession in the order placed, and the respective fruits are for the most part larger in the same order, save that No. 2 as an early second is larger in proportion than the rest. The two first varieties I consider so valuable as handsome additions to our early Strawberries, that I think I should not be justified in keeping them to myself. I intend, therefore, when the stock is sufficient (which cannot be before next season), to take some means of bringing them before the public; and if no other channel opens, I may, probably, give my gardener, who has necessarily taken much trouble off my hands during these long-continued operations, the privilege of so doing. As a professional man, actively engaged in various ways, it is doubtful whether I can go through the usual routine of exhibiting these seedlings, but I shall do so if time and circumstances permit; but at any rate I hope to give the Editors an opportunity of examining their merits,

as there ought to be some guarantee to those at a distance who cannot see my beds of the correctness of my descriptions. Those who see the plants growing, see them to greater advantage, and many excellent judges of fruit in this neighbourhood who have visited my gardens have been struck with the beauty and excellence of these varieties. I shall be happy to see any one who feels disposed to give me a call, either this season or next.

The *Early Prolific* is so early, so handsome as a fruit and as a plant, and so delicious in quality, that I feel sure it has no compeer in its season of excellence, if form, colour, size, and flavour combined in the same variety, are to be considered the types of perfection; whilst as to the *Duke* we have at once a larger, handsomer Strawberry if possible than *La Constante*, before that splendid sort growing by its side is scarcely half swollen, and certainly cannot be ripe in any quantity for some fortnight or so to come.

Amongst the remaining seedlings is a handsome, large-leaved, large-fruited, variegated variety. The fruit is not sufficiently ripe to describe now, but I mention the subject because one or two notices have lately appeared in the *Gardener's Chronicle*, of a variegated variety in Devonshire. I was not aware of any such variety of bold growth and bearing large fruit being in existence. I knew there were one or two small-leaved sorts, occasionally, but not very frequently, bearing a fruit about the size of the wild Strawberry, remarkable only as curiosities; but Mr. Foote tells us in the *Gardener's Chronicle*, of May 23rd, that the Strawberry in question was found in a bed near Exeter, in July, 1866, but whether it is a sport or a seedling he is unable to say. I must say, with all due deference to the opinions of others, that I do not believe in sports as to Strawberries. Either it is a seedling or an unnoticed variety previously in existence, there is no such thing as a sport: but I quite agree with Mr. Foote, that a handsome variegated variety equal even as a bedding plant to some of our best *Pelargoniums*, must ere long attract attention, and I felt myself very fortunate (though, as Lord Dondreary says, "it's a thing that no fellow can understand"), in having raised such a Strawberry, and which I shall take another opportunity of noticing when I have saved a little stock and know more of its qualities. That the above, which I have temporarily named *Pandora*, is a genuine seedling and from a good strain I know, from the fact that I gathered and sowed the seed myself, and have witnessed already the virtues of its allied seedlings.

The foregoing and other facts within my knowledge have only strengthened my opinion, that Mr. De Jonghe's theory as to the utter uselessness of artificial fertilisation as enunciated at page 363, Vol. VIII., of *JOURNAL OF HORTICULTURE*, is perfectly sound and correct. Besides the above varieties, raised from a sort nearly barren, which I have enumerated partly to illustrate the truth of his theory, I have a similar instance in the case of the celebrated large early sort, *Marguerite*, raised by M. Lebreton. This sort, prolific enough on the continent, with me almost refuses to bloom. Year after year I have cultivated the plants under all kinds of circumstances, but nothing would induce fertility. At length, previous to entirely giving it up, I determined to sow the seed of the first fine fruit I could get. I did so, and raised sixty seedlings, the whole of which are fertile, and only one of them at all approaching to the style of the parent, and many of them are so early and so much higher flavoured than the parent—the chief desideratum, that next year I hope to be able to speak of them.

I have had delicious fruit from these seedlings without any efforts as to situation, &c., from the 29th ult. The present terribly dry, scorching weather in the midland counties is, however, very much against the runners, which I am endeavouring to classify and save for the above purpose.

If another illustration were wanted in favour of Mr. De Jonghe's theory, I have some seedlings from *La Constante*, one of which (No. 12), is very early, and of quite a distinct shape and flavour, and extremely delicious. Another No. 8, is a bold grower, with a bright green leaf like *Victoria*, but handsomer, with a firm, bright salmon red, perfectly globular fruit, which might but for its origin be justly called a much-improved *Victoria*. Here is a perfect departure from every characteristic of the parent, but the fruit is, nevertheless, in another direction, a type of perfection.

I have large quantities of other seedlings coming on, of different strains to those above mentioned, from which I expect great results; and I may here observe that all depends upon good luck in getting the right strain. With the same attention and knowledge of the subject one man may be more fortunate

in a given period than another; for unless the operator hit upon a good strain, he may sow seed of half the sorts in his collection, and have only to mourn over his continual disappointments. Stick, therefore, to a good strain, and from the same Strawberry, as I have myself witnessed, sorts may be raised as wide asunder as Black Prince is from Trollope's Victoria.

One word as to the flavour of Strawberries. This every fragararian knows varies very much with soil and situation. I speak from my own soil, and in the majority of instances Strawberries are good and keep to their characteristic flavour; occasionally, however, we observe a great departure. Sir Charles Napier and Victoria on Mr. Rivers's soil, I recollect, are so acid that the addition of sugar is absolutely necessary, whilst on my ground these sorts, the latter especially, are sweet and refreshing. Within two miles of this place, again, Victoria is so sour and different in flavour, that but for its form and colour I should scarcely recognise it. Possibly, on the other hand, by the same rule, Strawberries raised on my soil may be richer in flavour elsewhere. Form, size, and colour are not so much influenced, and these are the more unchangeable types of perfection which lend such a charm to success in raising a new Strawberry.

Of mid-season varieties there are plenty, and there is scarcely room for improvement. What we want is better early and late sorts; and if I should be as successful in raising late varieties with these attributes of perfection, as I trust I have been with early ones, I shall have done some little service to horticulture, if only in contributing to the decoration of the dessert. At any rate, these are, in my humble opinion, steps in the right direction.—WILLIAM RODEN, M.D., A.M., *The Grange, Kidderminster.*

[We have been favoured by Dr. Roden with an opportunity of examining and tasting two of his new seedlings, Early Prolific and Duke of Edinburgh, and we were greatly impressed with the wonderful advance these two varieties are on all other early kinds, both in size and flavour. The former produces its fruit literally in bunches, and is as early as Black Prince, with fruit three times the size; the latter not quite so early, but nearly so, and the fruit immensely large, one specimen we had being over 2 inches in diameter, and the flavour remarkably fine. These are most valuable and characteristic acquisitions to the already too-numerous varieties of this estimable fruit, and they must become essential in every garden.]

JUDGING AT THE ROYAL HORTICULTURAL SHOW.

"J. W." says, page 419, that Mr. Turner's and Mr. Paul's collections of Variegated Zonal Pelargoniums ought to have been disqualified, for that they did not fulfil the conditions required by the schedule. I differ from him entirely. May Queen in Mr. Turner's, and Snowdrop in Mr. Paul's collections are true Variegated Zonals. Zonal is a term used and well understood as applying to a section of Pelargoniums, and distinguishing it from the florists' large-flowered, the French, the Fancy, and other kinds of Pelargoniums, and a Zonal in this sense may, anomalous as it appears, show no trace of a zone at all.

If it were intended that gold green and red, or white green and red Zonals (tricolors or quadricolors), should alone be eligible for exhibition in the class in question, it seems to me it should have been so expressed. As the wording stands I submit that Mr. Turner and Mr. Paul had a right to exhibit the plants they showed in this class.—P.

POTTING AURICULAS.

I see that you have inserted a paragraph by Mr. Hepworth, from "The Gardener," on the best time for potting the Auricula. He says July. Now, I beg to differ, and for the very reasons that he has advanced, and say that it is better to pot them as soon as the bloom is over. They have then a better chance of making their growth and filling the pots with roots than if potted in July, when they are somewhat at rest; and lest it might be thought that they would remain too long in the pots without change of soil, and so get soured, it must be borne in mind that from November to February they hardly require any water at all, and then a good top-dressing renovates them amazingly. I used always to pot in August, but of late years have adopted this plan, which certainly answers better

down south; it is that which Mr. Turner so successfully follows, though I am aware that other successful growers treat them differently.—D., *Deal.*

AMONG THE FIRST TRACES OF OUR NORMAN FOREFATHERS.

THREE tourists met on the Grand Parade at Eastbourne during last week—fair specimens of the classes into which such travellers may be divided. The Utilitarian observed, "I never saw such healthy, abundant crops—Wheat, Hay, Apples—all splendid. We may expect a quiet winter, for plenty and peace are a cause and effect."

The Valetudinarian added, "And what splendid weather!—temperature 85° in the shade. I do hope now to be released from this fettering rheumatism."

The Lover of the Beautiful, while those comments were uttering, was rewarding a little bare-legged girl for a spray of Roses she had presented, and well they merited the reward, for they were beautiful specimens of the old Cabbage Rose, and, like all the Roses in this vicinity, intense of colour and without an insect or a blotched leaf to mar their effect by a reminder of decay. "Have you seen such Roses as these since you were boys?" asked this third of the tourists, and then added, "How they revive memories of my old home, and make me forget that I alone am left of the group once gathered there." Full sympathy was expressed in that feeling, and this comment might have been quoted, "The charm of flowers to the lonely-hearted is often more than words can tell. They are a pleasure and delight; they recall happy days, bring kind friends to mind, and soothe and please in the saddest hours."

Those tourists passed a week in close companionship, and the following are jottings of their "sayings and doings."

This present rapidly increasing resort for bathing is not the East Bourne of the olden time. That is situated a mile and a half inland, deriving its name from a bourne, or rivulet, rising on the eastern side of the Downs, terminating at Beachy Head, and which extend throughout the length of Sussex, Hampshire, and Wilts. The head-spring of this bourne issues from the chalk in a field attached to the parsonage, passes through the garden of the Manor House, and mingles with the sea at Broad-bourne. From that stream the Romans drank eighteen hundred years ago, for the mosaic pavement of the rooms and bath of a Roman villa were discovered many years since near the western end of the Grand Parade.

That Parade is formed of three broad terraces or promenades, the lowest of which is washed by the sea. They rise one above the other, and the bank sloping from the higher to that below is planted with that perverse clinger to our warm sea-board the Tamarisk (*Tamarix gallica*). Such a belt as this will form when a year or two older will be unmatched. The Tamarisk deserves the epithet of perverse because it refuses to grow except on our southern coast. This remark induced an old resident who overheard it to rejoin, "The Oak is as perverse hereabouts, for there are but two near Eastbourne, and one of them is nursed in the garden of Oak Cottage, and that would not be if the cottage did not belong to the Penderells, descendants of those who saved Charles II."

This led to the just observation that the gardening around is worthy of high commendation. The climate is friendly to exotics; flowers flourish in the open air, and that which readily rewards our labour has that care readily bestowed. The love of gardening seems to be in all classes. The areas in some of the streets are filled with flowering plants, and in their shadiest corners are rockeries tenanted by vigorous Ferns. In the windows of the cottages are Pelargoniums, Fuchsias, Calceolarias, and other flowers, looking so healthy and so intense of colour as to command notice, and the gardens around the cottages are well stocked with cleanly-cultivated vegetables and fruits.

Among the fruits must the old orchard trees be well remembered. Who can tell how old those Apple trees are, the stumps of which, alive yet, are in the garden adjoining the ruins of Hurstmonceux Castle? or of those in some of the old gardens at Waincock? It was too early in the year to identify the varieties, with but one exception, and that exception was the nearly extinct Old Codlin. Its leaves and fruit, though young, were unmistakable. It is in a cottage garden, and the old dame there resident, overhearing its praise, came forward to tell that it was strong "cause it was grafted on a Black Jack." What this stock is called in a less local vocabulary did not then

appear; but Mr. Ashwell, the proprietor of the Strawberry Gardens at Wannock, explained that the Norfolk Beech is known about Eastbourne as the "Black Jack."

Those Strawberry gardens are well worthy of a visit. They have been yielding Strawberries ever since 1792. They occupy about four acres, and as much of the beds are under fruit trees, and as many of our modern varieties are cultivated, and as there is a stream of water winding through and dividing the gardens, the supply of fruit is large and long-continued. The gardens are open to the public, and in the season forty visitors during a day visit them to banquet on Strawberries, cream, and bread and butter. Mr. Ashwell is rapidly adding to the means of fruit culture there, and visitors are treated too courteously not to be induced to repeat their visit.

It was observed during the tourists' visit that Wannock is a corrupt pronunciation of Walnut Street; that nut tree flourishes in the neighbourhood, as it does in all alluvial soils in the vicinity of the chalk formation. There are some very fine specimens near Old Eastbourne.

The streams, such as that at Wannock, and the widely-extending levels around Eastbourne are so favourable to the growth of aquatic and marine plants, that nowhere in England are they to be found more fine or in greater numbers. The beautiful *Butomus umbellatus*, or Flowering Rush; *Caltha palustris*, or Marsh Marigold, here called "Water-blob"; *Crambe maritima*, or Sea-kale, near Beachy Head; *Glaucium luteum*, or Horned Poppy, near the beach; *Nuphar lutea*, or Yellow Water Lily, and *Nymphaea alba*, or White Water Lily, in the still waters of Pevensey Level, and many other smaller aquatics were found by the tourists. On the Downs of Beachy Head and its vicinity also were noticed the *Ophrys apifera*, Bee Orchis; *Ophrys muscifera*, Fly Orchis; *Orchis ustulata*, Dark-winged Orchis; *Orchis compea*, Fragrant Gymnadenia; *Orchis pyramidalis*, Pyramidal Orchis; *Orchis mascula*, early Purple Orchis; *Orchis fusca*, Brown-winged Orchis, in the marshes; and *Orchis latifolia*, in the moist meadows near Polegate.

No place in England is more associated than is Pevensey with memorable events and personages. It was the "Anderida Portus" of the Romans. Its castle is partly of Roman, partly of Norman architecture; it was the last stronghold of Harold, and the first stronghold of the Norman William. It and the surrounding districts were granted to his Norman followers, and the names of places around mark how the Norman mastery prevailed. Langley Point is Languey, or Long Nose Point; Pevensey, Hnrtmonceux are all compounds of Anglo-Saxon and Norman names. The present race cling to the Norman French, for even the bellman of Eastbourne still prefaces his announcement with the old "Oyez, Oyez, Oyez," which some of your readers may not know is "Hear ye, Hear ye, Hear ye."

Then Pevensey was, too, the birthplace of Andrew Borde, the wandering friar and physician of Henry VIII., who punned upon his own names, and designated himself *Andreas Perforatus*, or Bored Andrew, and was through life so jocular as to have given occasion to a jester being called a Merry Andrew.

Wilmington has no other connection with Pevensey than that the tourists visited the ruins of its priory on the same day. Those ruins are trivial, but the Yew tree in its churchyard is not, for the trunk of that tree is 22 feet in circumference, and its branches overshadow a circle 80 feet in diameter. That church is on an eminence, and may serve to sustain the opinion that one of the reasons why such trees were planted near churches was that they might shelter those edifices. At all events, the last statute passed in the reign of Edward I. was entitled "*Ne Rector arbores in cimiterio prosternat*" (The Rector shall not fell the trees in the graveyard), and the preamble of the statute states that the trees planted there were to screen the church from the wind. Churches in those times, as Daines Barrington observes, were built low, and the thick, wide-spreading evergreen foliage of the Yew answered for shelter better than that of any other tree.—G.

CARBOLIC ACID.

NOTICING IN THE JOURNAL OF HORTICULTURE for May 21st, that carbolic acid will prevent Odium, &c., I placed a dish or two in a large vinery in which Odium was showing itself, and after leaving it in for three or four days, I am very much disappointed at finding that it has no effect on the Odium, and has injured the foliage of the Vines to a most disastrous extent. Can any one else give their experience on this matter?—G. R.

[We published only an extract from another journal, and that extract only says that it will "prevent," not that it will de-

stroy mildew. We shall be obliged by relative information from any of our readers. The above communication will act as a warning to be careful in trying the efficacy of the acid in question.—Eus.]

ROYAL HORTICULTURAL SOCIETY.

JUNE 16TH AND 17TH.

SPECIAL PRIZE AND PELARGONIUMS. Since this was properly one of the Society's minor shows, it attracted nearly the dimensions of a great show, and, from the diversity of the subjects which it brought together, was of a very interesting character. As regards the extent of the Show, it filled a portion of the north-eastern conservatory arcade, the conservatory itself, and the whole of the north-western arcade, in which were densely packed not only the variegated Zonal Pelargoniums. The arrangement of the tables in the conservatory was much more effective than on former occasions, there being a small octagon stage at each end, the one filled principally with specimen Orchids, the other with a charming miscellaneous group in which there were also several Orchids, contributed by Messrs. Lee, of Hammer Smith. In the centre was a stage of similar form, to those at each end and occupied with Roses, whilst between the central and end stages were two oblong ones divided up the centre. The whole had a symmetrical appearance, and only wanted something to conceal the wood-work to make it all that could be desired in the absence of a place specially adapted for holding exhibitions.

Taking now the classes in the order of the schedule, those from 1 to 7 were for special prizes offered by members of the Council, & which the Society added about half the amount as second prizes.

The Duke of Buccleuch, President of the Society, offered in Class 2 a prize for the nine best cultivated Azaleas; but as it is now getting late for fine specimens of that plant, especially after the hot weather of the last fortnight, no one came forward to claim the prize.

The same nobleman also offered a prize for the nine best cultivated Roses in pots, which was taken by Mr. William Paul with Paul's Giant, La Reine, Anna de Schleswig, Madame A. de Rougemont, Baron A. de Rothschild, Colne Forestier, Semateur Vaise, Catherine Guillot, and Lelia. These were well-grown specimens, and covered with flowers, but the latter in consequence of the heat had lost that freshness which in the earlier part of the season rendered the Roses exhibited more than usually beautiful. Mr. W. Paul also exhibited a collection in small pots, for which an extra prize was awarded, and Messrs. Paul & Son had one for boxes of cut blooms, among which we noticed a large example of the new Rose, Duke of Edinburgh, and Boule d'Neige, a fine white Hybrid Perpetual.

In Class 3, which was likewise for a prize offered by the Duke of Buccleuch, the subject being the nine best cultivated Zonal Pelargoniums in bloom, Mr. Weston, gardener to D. Martineau, Esq., Clapham Park, was first, with finely-grown plants from 3 feet to 3½ feet in diameter. These consisted of Herald of Spring and Excel-lest, scarlet, Monsieur Martin, Emily Vancher, Sparkler, Eugénie Mizard, Sensation, Amelia Grisau, and Beauté des Farterres, lilac rose Nosegay. Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., M.P., Regent's Park, was second, but the plants were rough, and showed to a great extent the wire on which they were trained. Among them, however, were some very good kinds, as Dr. Lindley, which makes a fine pot plant, and Mrs. William Paul, with fine large flowers.

Class 4 was for a prize offered by W. Wilson Saunders, Esq., and which had for its subject the ten best cultivated Orchids. This was taken by Mr. Williams, of Holloway, who had *Epidendrum vitellinum*; *Vanda tricolor*; *Vanda saxavis*, good, though not specially remarkable; *Oncidium leopoldinum* with nine spikes of yellow and brown flowers; *Lelia purpurata* with two spikes, each with four finely-colored flowers; *Cypripedium barbatum* superbum, with twenty-eight blooms; *Acridis larpentei*, with three spikes; *Acridis odoratum majus*, a splendid plant with eleven racemes of bloom; the bright-colored *Acridis Lobbi*, and *Cypripedium superbum* with a dozen blooms.

In Class 5, the best twenty herbaceous plants in flower, Mr. Saunders likewise offered a prize, which went to Mr. Ware, of Tottenham. Among the plants which he exhibited were *Platanus atrovirens* and procumbens, the former with rich blood-red, the latter with small but pretty pink flowers; *Stictis maritima* rubra, with two heads of deep rose-colored flowers; *Orchis foliosa*, ornamental alike by its spotted leaves and neat heads of flower; *Oxalis spectabilis*, with lilac purple flowers, and leaves prettily marked with purple; *Campanula glomerata* alba; *Veronica maritima* alba, with very neat heads of white flowers; double white *Spiraea filipendula*; and *Sedum peruviana* alba. The same exhibitor also had an extra prize for cut flowers of herbaceous plants, among which were several of the above, *Lychnis chalcedonica*, Foxgloves, *Polonia*, *Isides*, and *Lilium*, and he likewise sent cut Roses and Antirrhinums.

Class 6 was for the best display of bedding plants in wooden boxes 10 inches square by 5 in. high, the prize here being also offered by Mr. Wilson Saunders, and it was awarded to Messrs. F. G. Henderson, of the Wellington Nursery, for the most and best interesting collection of these plants which we ever saw exhibited. Altogether it comprised one hundred species and varieties, consisting of Pelargoniums of various classes, Saxifrages, Echeverias, Cusceas, Centaureas and other white-leaved edging plants, variegated Grasses,

Euonymus, *Iresine Herbstii*, *Perilla*, and so many other plants that their names constituted of themselves a small catalogue which was freely distributed. The whole was surrounded by *Retinospora leptoclada*, forming very neat, small, pyramidal plants. The example which Messrs. Henderson have set will doubtless be followed by others, and in this way the public will have an opportunity of comparing and selecting for bedding and other purposes a vast number of plants the merits of which are but too little known.

The last class in which a special prize was offered was that for the best collection of Lilies in pots, the donor being G. F. Wilson, Esq. This was taken by Mr. Burley, Albert Nursery, Bayswater, who sent several pots of *Lilium auratum*, the Tiger, Martagon, common white, and Turk's Cap Lilies, an *Amaryllis*, and one or two other plants not properly Lilies, though belonging to that family. The best collection of Lilies, however, were those furnished by Mr. Wilson himself as cat spikes, to which the Floral Committee awarded a special certificate.

Of new plants there was a fine show, to which Messrs. Veitch largely contributed. They took the first prize for the best six new plants sent out in 1866 and 1867 with *Retinospora plumosa*, a very graceful species, and well deserving its name from its feather-like appearance; *Sanehezia nobilis variegata*, the yellow-veined foliage of which renders it one of the most handsome of variegated plants; *Anthurium regale*, with noble white-veined leaves; *Maranta Veitchii*, one of the finest of ornamental-foliaged plants; *Nepenthes hybrida maculata*, hung with numerous pitchers; and *Dalechampia Roeziana rosea*, with rosy bracts. Mr. Bull was second with the last-named plant; *Maranta roseo-picta*, with beautifully-marked foliage; *Encelphalartos gracilis*, *Trichinium Manglessii*, *Zamia villosa*, and *Echites rubro-venosa*, with leaves beautifully veined and reticulated with red. Mr. Williams sent *Maranta roseo-picta*, *M. Veitchii*, *Gleichenia circinata glauca*, *Fittonia argyroneura* with leaves veined with pure white, *Miconia peruviana*, with Sphaerogone-like leaves, and *Dipladenia amabilis*, with glowing deep rose-coloured flowers.

For the best six new plants sent out in 1868 Messrs. Veitch were again first with *Begonia boliviensis*, *Alocasia Jenningsii*, *Retinospora filicoides*; *Croton interruptum*, with bright red midribs to its narrow leaves; *Davallia paryala*, a charming little Fern with minutely divided leaves; and *Alocasia intermedia*, with large metallic green leaves having a silvery lustre. Mr. Bull was second with *Cibotium regale*; *Alocasia Jenningsii*; *Cyrtodeira chontalensis*, with brownish leaves with a band resembling frosted silver longitudinally along the centre; *Dicffenbachia eburnea*, with white markings; *Maranta virginalis*, banded with white; and *Panicum plicatum foliis niveo-vittatis*, with leaves $1\frac{1}{2}$ inch wide, exhibiting a few narrow white stripes, but ineffective as shown.

The best new plant shown for the first time in flower in Great Britain was *Dipladenia holiviana* from Messrs. Veitch. The flowers are very distinct in colour from those of the other *Dipladenias*, being white with a yellow throat, and measure about 2 inches in diameter. Messrs. Veitch likewise exhibited *Osbeckia virgata*, with purple flowers and prominent yellow stamens. It is a native of Ceylon. Mr. Bull was second with *Lysimachia tubinoides* with small white flowers.

For the best new ornamental-foliaged plant Messrs. Veitch were also first, exhibiting *Croton Wisemanii*, with leaves beautifully mottled and marbled with green and yellow, and a rich yellow band along the centre of the leaf. The same firm likewise sent *Alocasia Cheloni*, with magnificent bronzed leaves, especially when young, and being then remarkable for their splendid metallic lustre. For the best new garden seedling in flower, Messrs. Veitch took another first prize with a hybrid *Cattleya* raised between C. Chelsoni and C. Aeklandie, in which the colours are purple, white, and brownish green spotted with purple. Mr. Bull was second in the same class with Ivy-leaved *Pelargonium* Princess Thyra, with for its class large pale rose flowers, lined in the upper petals with crimson.

A class for six fine-foliaged and six flowering plants followed next in the schedule, and in it Mr. Williams was first, with a fine *Croton variegatum*, *Dasyliroton acrotrichum*, *Fatania borbonica*, *Yucca quadricolor*, *Pandanus ornatus*, *Draecena lineata*, a fine specimen of *Pimelea decussata*, an *Ixora*, and other flowering plants. Mr. Wilkie, Oak Lodge, Kensington, was second in the same class, having a good specimen of *Pimelea*, a balloon-trained *Rhynchospermum jasmoides*, the Cocoa Palm, Variegated Aloe-leaved *Yucca*, and other plants with ornamental foliage.

In the next class for the best twelve Stove and Greenhouse plants, Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, had a first prize for a well-grown collection, in which were good specimens of *Dipladenia crassinoda*, *Aphelexis mearnsii* purpurea, Barnes's variety of *Phenocoma prolifera*, the showy *Kalosanthes Phoenix*, and good *Heaths*, &c. Mr. Wilkie, who was second, had good *Heaths*, *Clerodendron fallax*, and other plants. Mr. Tanton, of Epsom, had a third prize for a collection in which *Allamanda Hendersoni* was conspicuous by the great size and abundance of its flowers, in addition to which he had *Heaths*, *Aphelexis*, and *Statice*.

The Subscription prizes for Variegated Zonal *Pelargoniums* excited much interest among exhibitors, and they brought a multitude of varieties, many of them very nearly approaching each other, but between which the shades of distinction were infinite.

In Class 15, for the best Golden Variegated Zonal *Pelargonium* not in commerce, Messrs. E. G. Henderson were first with Mrs. Grieve, a

splendid variety with large leaves having a broad dark crimson zone and a distinct yellow edge. Mr. Stevens, of Ealing, was second with *Achievement*, also splendid, having a crimson and nearly black zone and a narrow yellow edge. Messrs. Carter were third with *Ettie Beale*, with a bright and dark crimson zone, green centre, and regular yellow margin, a very pretty variety. Mr. Mann, of Brentwood, was fourth with *Masterpiece*, having fine large leaves very well marked. Messrs. Lee, Turner, Grieve, Tanton, F. & A. Smith, Garaway, Saltmarsh, and E. G. Henderson, also exhibited in this class, and some of their varieties were also fine.

The best Silver Variegated Zonal not in commerce, came from Messrs. Lee, of Hammersmith, and was named Mrs. John Clutton. It has large leaves with a fine white edge, and a dark zone with fiery markings. Mr. Grieve, Clifton Hall Gardens, was second with *Lass o' Gowrie*, having a broad white margin, and a rosy crimson and dark crimson zone, a finely-marked variety. Messrs. Carter were third with *Princess Beatrice*, having a broad white margin surrounding a dark crimson zone with flushes of bright crimson. Mr. Turner, of Slough, took the fourth prize with Miss F. Stevens, with a finely-marked dark zone flushed with rose.

For the best Gold and Bronze *Pelargonium* not in commerce, Messrs. F. & A. Smith took the first prize with *Criterion*, a magnificent variety, having a rich deep brownish red zone, which, as well as the golden margin and centre, is very regular. The same firm was second with *Arab*, having a broader margin and a somewhat greener ground colour, but with the zone very rich and distinct. Mr. Turner was third with Mrs. Simpson, also a handsome variety, but not so regular in outline; and Messrs. Lee were fourth with *Lady Farnham*, with a broad reddish brown zone and distinct yellow edging.

The best Golden-leaved variety not in commerce was *Golden Emperor* with large golden leaves, with a slight tinge of the palest green, and very beautiful. This came from Messrs. Downie & Co., and the second prize went to Messrs. Saltmarsh for *Golden Queen* with pale golden leaves, scarcely less beautiful. Mr. Keeler, of Lewisham, was third with a kind also called *Golden Queen*, and Messrs. F. & A. Smith fourth with *Golden Glen*.

In the next class for the best Silver-edged *Pelargonium* not in commerce, Mr. Turner was first with *May Queen*, with a fine pure white margin, and apparently of free habit of growth. The second prize went to Mr. Turner for *Bright Star*, also an excellent variety; and the third to Messrs. E. G. Henderson for *Bridal Bouquet*, with a leaf flatter than most others, and broadly edged with white.

The next class was for the best three Golden Variegated kinds not in commerce, and in this the first prize went to Messrs. Carter & Co. for *Sir R. Napier*, having a splendid blackish crimson zone and being very distinct; *Prince of Wales*, which maintains the high character which it gained as a seedling; and Mrs. Dunnett, with a fine, broad zone. Messrs. F. G. Henderson were second, and Messrs. F. & A. Smith third, with *Jetty Lacy*, very fine, *Viceroy*, and *King*. The last-mentioned firm was first in the next class, that for the best three Silver Variegated kinds, showing *Banshee*, *Peri*, and *Miss Burdett Coutts*; Mr. Turner being second with *Excellent*, *Clara*, and Mrs. F. Stevens; and Messrs. Garaway third with *Silver Pheasant*, *Julietta*, and *Cup of Beauty*.

In the class for the best three Gold and Bronze varieties not in commerce, some very fine ones were shown. The first prize was taken by Messrs. F. & A. Smith with *Goldfinder*, having a broad reddish chocolate zone; *Plutus*, darker in colour; *Sibyl*, with a broad deep-coloured zone and narrow margin, the ground colour greenish yellow. These varieties were very beautiful, bold, and effective. Messrs. Carter & Co. came second with *Black Prince*, with a broad very rich chocolate zone, *Cleopatra*, and *Anthony*, very pretty, with a broad golden edge. The third prize went to Messrs. Saltmarsh for the Hon. Mrs. Claghton, *Plutus*, and *Bronze Queen*.

The best twelve Zonal *Pelargoniums*—Variegated, Gold and Bronze, or Golden-leaved—came from Mr. Turner, and consisted of *Excellent*, *Beauty of Guestwick*, *Clara*, *Beauty of Salthill*, *Sophia Dumaresque*, Mrs. Turner, Mlle. Christine Nilsson, *Lady Cullum*, very fine, *Empress Eugenie*, *Queen Victoria*, Dr. Simpson, and *Princess of Wales*. Messrs. F. & A. Smith were second with a very evenly-grown set of plants, the kinds being *Snuray*, *Exquisite*, *Bullion*, *Banshee*, *Coronet*, *Miss Burdett Coutts*, *Lonisa Smith*, *L'Empereur*, *Enchantress*, *Plutus*, very fine, *Sultan*, and *Imperatrice Eugenie*. Messrs. Carter & Co., who were third, sent *Princess of Wales* with a beautifully coloured zone, *Goliath*, *Fairy Land*, *Aurora*, *Sultan Abdul Aziz*, *Royal Standard*, *Ruby Ring*, *Marian* with a bright crimson zone, *Josephine*, *Egyptian Queen* very effective and good, *Prince of Wales*, and *Daybreak*. Messrs. E. G. Henderson also showed *Lady Cullum*, *Italia Unita*, and several other fine varieties in this class.

Class 24 was for the best six of any class, nurserymen only exhibiting, and in this the prizes were awarded respectively to Messrs. Carter, Messrs. Downie & Co., and Mr. Turner, who each exhibited well-grown plants. In the corresponding class for amateurs, Mr. Jones, of Highgate, was first, and the second prize was withheld.

For the best six Gold or Silver Variegated Zonal varieties, the prizes went to Messrs. E. G. Henderson, Mr. W. Paul, and Messrs. Lee, of Hammersmith; and for the best six Gold and Bronze kinds, to Mr. Cannell, Messrs. Downie & Co., and Messrs. F. & A. Smith.

The best three plants of any Golden or Silver Variegated Zonal variety in commerce, in 6-inch pots, were *Howarth Ashton*, from Messrs.

M. G. Henderson, and which exhibited a fine blackish crimson zone; Messrs. Perkins, of Coventry, were second with Countess of Craven; and Mr. Turner third with Mrs. Turner.

The best six Nosegay *Pelargoniums* in pots came from Messrs. Downie & Co., and consisted of Duchess of Sutherland with splendid trusses of magenta-tinged rose-coloured flowers, Le Grand, King of the Nosegays, very fine, orange scarlet; Countess of Strathmore, Mrs. Laing, and Rose Stella. The second prize was withheld, and the third went to Mr. Wheeler.

In the nurserymen's class for six Zonal *Pelargoniums* in 6-inch pots, Mr. W. Paul exhibited some small plants of fine varieties. Among these were Surpasse Beauté de Suresnes with beautiful lilac-rose flowers, with a white blotch at the base of the upper petals; Gloire de Douai, brilliant orange scarlet, and the flowers in large trusses; Aurora, rosy salmon, and Madame Thibaut, deep salmon. In the corresponding class for amateurs, third and fourth prizes were awarded respectively to Mr. August, of Beddington, and Mr. G. Wheeler, the first and second being withheld. The best single specimen came from Mr. Weston, being a plant of White Tom Thumb, measuring 4 feet across, in fine bloom. Mr. Wheeler was second with La Peyronne.

Among miscellaneous subjects, Messrs. Lee exhibited a fine group, which has been already referred to, consisting of Orchids, Heath, fine-leafed and flowering stove and greenhouse plants. The same firm also furnished *Hemerocallis* Kwanse, with leaves boldly striped with white, a pretty dwarf gold-variegated Box, *Rhus glabra* with handsomely cut leaves, a *Tropaeolum* with showy yellow flowers and small glaucous foliage, and *Acauthopanax variegata* with small leaves neatly marked with cream-coloured variegations. Messrs. Downie, Laird, & Laing sent *Caladiums*, among which was M. Kolb, light green, becoming of a deeper green towards the edges of the leaves, and blotched with carmine. Messrs. Veitch had new *Dichorisandras*, *Maranta roseo-picta*, *Coffea bengalensis* with pretty white flowers, *Dendrobium crystallinum*, a fine collection of *Gloxinias*, of which Bergerette and M. Brogniart received second-class certificates from the Floral Committee, the splendid *Begonia Veitchii*, and other new plants. Messrs. Veitch also had a collection of *Delphiniums*, of which Madame H. Jacotot and Gigantea were two of the finest. Mr. Sampson, of Yeovil, and Messrs. Windebank & Kingsbury, of Southampton, sent numerous seedling *Pelargoniums* of various classes, and Mr. Turner, Messrs. F. & A. Smith, Messrs. Downie and Co., Messrs. E. G. Henderson, Messrs. Saltmarsh, Mr. Mann, sent several collections of new and old kinds. Mr. W. Paul also contributed several varieties, among which were Jason, Prince Silverwings, Platach, Ronge et Noir, and Goldfinch. These we omitted to mention in the proper place. Mr. Ball furnished new *Coluses*, *Areca Baueri*, and other plants. Lastly, Mr. Green, gardener to W. Wilson Saunders, Esq., sent several rare and curious plants.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. The Committee met on Monday last at Chiswick to examine the trials of Early Peas, when the following decisions were arrived at, confirming the decisions of last and former years. Sutton's Ringleader, Dillstone's Early, and Carter's First Crop were found to be synonyms.

Dickson's First and Best, Young's Early, Poynter's Early, Sutton's Improved Early Champion, and Taber's Perfection were all synonyms with Sangster's No. 1.

Wheeler's First Early proved to be the same as Dillstone's, or an inferior stock of that variety.

Nutting's Improved No. 1 is a very fine stock of Dillstone's Early. Paul's Tom Thumb is a true stock of the old Tom Thumb.

Stuart & Mein's Improved Early is closely allied to Dickson's Favourite, and only a second early Pea.

Laxton's William 1st. A fine early green Marrow Pea, with a beautiful pod, ripening only four days after Sangster's No. 1, and a week in advance of any other green Marrow.

Laxton's Alpha. The character of this Pea does not yet appear to be fixed, as the pods exhibited a varied character, some being very large, full, and as early as Dillstone's, and others were hollow.

Early Emerald, sent by Mr. Turner, is very much like Little Gem.

Nutting's Maltum in Parvo. This is a first-class early wrinkled Marrow Pea. The plant is of dwarf habit like Little Gem, but with immense pods. A first-class Pea.

Sadbury A1, wrinkled, is a more robust grower than Maltum in Parvo, and not so early.

Nelson's Vanguard was not distinguishable from Climax.

Nutting's No. 1, wrinkled, similar but not equal to Maltum in Parvo.

Nutting's Early Seedling does not differ materially from Maltum in Parvo.

Carter's Dwarf Waterloo is a Pea of the highest excellence. It is a dwarf, 1½ foot high, producing large pods like the Tall Waterloo, and in such abundance as to be quite marvellous.

The Committee again met at South Kensington, on Tuesday, when Mr. Charles Bates, of the Metropolitan Sewage Company, Barking, exhibited a basket of very handsome fruit of British Queen Strawberry, grown under the influence of the London sewage, the flavour of which did not correspond with the fine appearance of the fruit. Mr. Sinclair, gardener to R. Allison, Esq., Woolton Hayes, Liverpool,

sent a seedling Melon which was not of good flavour. Mr. Higga, gardener to R. Driver, Esq., Crabwood, Southampton, sent fruit of the Lognat perfectly ripened and of unusually good flavour.

FLORAL COMMITTEE.—This being the great and special day for the Variegated Zonal *Pelargoniums*, the subjects for examination were comparatively few. Messrs. Veitch contributed new and valuable plants largely as usual. Two *Gloxinias* were selected out of some two dozen varieties and were awarded second-class certificates—Monsieur Brogniart, a curiously-spotted flower; and Bergerette, a soft rose and white flower. *Angraecum falcatum*, a small, dwarf, delicate white Orchid, sweetly scented, received a second-class certificate. M. Verschaffelt sent again his variegated-leaved *Passiflora trifasciata*. This will, probably, prove a valuable foliage plant, and as a climber will be a great acquisition—first-class certificate. Mr. Garaway exhibited three varieties of crested *Athyrium Filix-foemina*, one the usual form cristatum, another *Athyrium F. scopiforme*, the true name, *Thiaptant* received a first-class certificate when exhibited by Messrs. Ivery under a wrong name. Also *Athyrium F. encyphalum*. Both of these received first-class certificates. Mr. Green, gardener to W. Wilson Saunders, Esq., brought four interesting plants which received a special certificate. *Cypripedium arietinum*, a hardy North American plant; *Calliopsis* sp., a bulbous-rooted plant; *Primula sikkimensis*, and a beautiful little Orchid *Promenaea stapelioides*. Each of these plants was very attractive and novel. Mr. Wm. Paul was awarded a first-class certificate for a double *Pelargonium*, Madame Lemoine, a delicate rose and pink-coloured flower. Messrs. Henderson received a first-class certificate for the same. The specimens exhibited by this firm were stronger and larger plants, showing most undeniably that this is a first-rate plant.

Mr. Cole, Worthington Nursery, sent a beautiful specimen of a seedling Fern, *Lomaria gibba crispata*, which received a first-class certificate. Mr. C. Noble exhibited *Spiraea palmata* (Thunberg), a most graceful plant, with deep pink clusters of flowers—first-class certificate.

G. Wilson, Esq., sent a collection of cut *Liliums*, which were awarded a special certificate. Among them were *L. auratum*, *L. longiflorum*, *L. testaceum*, *L. candidum*, *L. japonicum*, *L. aurantiacum*, and two varieties of *L. Thunbergianum*; the *Lilium auratum* were specimens of two distinct varieties. This made a very beautiful group. Mr. Hally, Blackheath, sent some seedling double *Pelargoniums*, but no advance upon those in cultivation. Mr. Mann sent a Zonal *Pelargonium* Countess of Derby, a fine flower, but much resembling Persian and others; it is, nevertheless, a first-class plant and a fine flower, a worthy companion of his lordship. Mr. Turner sent variegated *Pelargoniums*, but none of any great merit. Messrs. Lee also sent a collection of Zonal *Pelargoniums*, and Mr. Stevens, of Ealing, the same. Messrs. Veitch sent *Coffea bengalensis*.

GENERAL MEETING.—G. F. Wilson, Esq., F.R.S., in the chair. The business was confined to the election of five new Fellows.

ROYAL BOTANIC SOCIETY'S SHOW.

The second great summer Show of this Society opened yesterday, and will be continued to-day. In the plant department there is a fine display of ornamental-foliaged plants, of which Mr. Fairbairn, gardener to the Duke of Northumberland, Stion, sends some magnificent specimens; and among nurserymen, Mr. Williams sends fine collections of Exotic Ferns and Palms, besides many other subjects. Of Orchids, Mr. Penny, Mr. Wilson, Mr. Gedney, Mr. Williams, and Mr. Parker have good collections; and of new plants, Messrs. Veitch and Bull send extensive collections. E. J. Lowe, Esq., of Highfield House, near Nottingham, has a very numerous collection of new forms of Ferns; and Mr. Perry, of Castle Bromwich, has a splendid stand of *Verbenas*, in which are two fine seedlings—viz., Mrs. Perry and Florence Fiddian, also Mrs. Turner, Jamaica Birkbeck, W. Dean, and others of his fine new varieties.

Among the stove and greenhouse plants, Mr. Peed has some very fine specimens, especially *Allamanda grandiflora*, and a splendid example of *Dipladenia nassibalis*, on which the flowers are not only numerous but large. Heath is represented in numbers, and among them are excellent specimens. *Pelargoniums* both Show and Fancy, as shown by Mr. Fraser, Mr. Donald, Mr. Nye, and others form a fine bank. Cut flowers, especially Roses, are in great force both as regards numbers and beauty.

Of Fruit there are several heavy Queen Pine Apples, Mr. Ward, of Bishop Stortford, having one upwards of 6 lbs. in weight, and Mr. Barnes, of Bicken, one of 5 lbs. 7 ozs. Mr. Hannan, gardener to R. T. Crawshay, Esq., Cyfarthfa Castle, has a Providence of 12 lbs. 7 ozs., finely ripened, but not quite perfect in the swelling-off at the top.

Of Black Hamburgh Grapes there are numerous splendid bunches, and Mr. Lyuu and Mr. Meads have fine bunches of Black Prince, Buckland Sweetwater, from Mr. Douglas, Loxford Hall, is finely ripened, especially two bunches from a grafted Vine, and with these another bunch from the Vine on its own roots does not compare advantageously. Messrs. Lane also show excellent bunches of the same kind. Fine compact, large-berried bunches of the Royal Ascot are

shown by Messrs. Standish & Co., from Vine grafted in May, 1867. Royal George and Violette Hative Peaches are large and well ripened; and of Strawberries, immense berries of Dr. Hogg are shown by Mr. Douglas, along with President, also large and fine. The Metropolitan Sowing Company send British Queen, also of very large size.

INSECTS.

(Continued from page 419.)

RED SPIDER.—This is one of the smallest and most inveterate of the enemies with which the gardener has to contend. There is scarcely a house requiring fire heat for the successful cultivation of its inmates, in which these do not at some time suffer from red spider. Its attacks are mainly confined to the under sides of the leaves, but if allowed to establish itself it will destroy the young shoots. Whilst deriving food from the plants, it greatly impairs their health and vigour, and in the case of those which bear fruit the flavour of that is to a great extent destroyed. Indeed, if the red spider be allowed to have its own way, the crop will be worth little, and the buds in the axils of the leaves will be so imperfectly formed that they will either fall in winter, or be so puny at the time of flowering that there will be no hope of the blossom setting and of their bringing to maturity a good crop. The vigour of the tree, likewise, is not so perfect in the following year as that of a tree not attacked, for the parasite feasts on the juices of the plant, appropriating to its use that which would otherwise be expended on the formation of buds and the perfection of the current year's growth, and depriving the tree of the stored-up sap on which its vigour in the following year in a great measure depends.

The red spider is of a bright red colour, and has the appearance of a minute red speck no larger than a grain of silver sand. In its young state the insect is pale grey, but varies considerably in colour; indeed, there are several kinds of it. The red is, perhaps, the most common, but is not the most injurious, nor is it so difficult to destroy as the dark grey, which has a whitish head, is far more active, and multiplies with greater rapidity. It forms for itself a web of the slenderest threads conceivable, and marches along its labyrinth with incredible swiftness.

The best indication of the presence of red spider is the upper surface of the leaves exhibiting minute yellowish brown specks, and if the under sides of the leaves are examined there will be found a small red speck, which may, by touching it with the point of a pen, be set in motion. If the specks are more of a blotch than speck, and spreading, it will mostly be found that the specks on the under side of the blotched leaves are not red, but of a dark grey hue, and that they are moving to and fro. The upper surface of the leaves will show the presence of red spider beneath, and when the least sign is noticed, no time should be lost in attempting the destruction of the insect.

Commence by giving a thorough syringing with water, directing its force against the under sides of the leaves, driving the insect and its web off the leaves. This syringing should be given every evening and morning as long as it is practicable to do so without injuring the ripening of the fruit and of the wood. This syringing may be thought injudicious, for some of our best cultivators seldom syringe their fruit trees, but fruit trees which are syringed morning and evening from the setting of the fruit until it swells or changes colour for ripening are never attacked by red spider. I would in all cases recommend syringing where soft water can be obtained, and it may be collected in most places, if provision be made to catch all the rain water falling on the garden structures. There cannot be a doubt that water in some places is not good for syringing with, and especially where it is derived from springs; but even such may be made suitable for the purpose by exposure to the sun and air in an uncovered cistern, and it may be rendered quite equal to soft or rain water by adding one peck of soot to every thirty gallons, stirring the soot well up, and allowing the whole to stand forty-eight hours. Syringe with the clear liquid. Either this or syringing with rain water is a complete preventive to, as well as cure for, red spider.

There are cases in which the water cure cannot be employed, as where syringing one plant attacked would be injurious to other plants in a state of growth for which a dry atmosphere is needed. In the case of a solitary plant being attacked it may be removed, and, if smooth-leaved, like the Gardenia and Fuchsia, it should be syringed with a solution of soft-soap at the rate of 2 ozs. to the gallon, the pot being laid on its side, and the soapy water directed against the under sides of the leaves, the plant being turned round so as to give

every leaf a forcible syringing. The solution should be used at a temperature of 120° for plants in growth, and at 140° for those whose growth is perfected. This application repeated once or twice will free the plants of the insect.

Cucumbers and Melons in frames and pits cannot well be syringed, and other means must, therefore, be resorted to. It is well in all cases where plants subject to red spider are grown, to give the woodwork of the house a thorough cleaning with soft-soap water, using a brush and sponge, and taking care to keep the soap from the glass, which, however, should be thoroughly washed with clean water; and the walls ought to have a thorough whitewashing with equal quantities of lime and flowers of sulphur, bringing them to the consistency of whitewash by adding a solution of soft-soap at the rate of 2 ozs. to the gallon. This is a good preventive, and yet not always effectual. If the red spider appear fill the evaporation troughs, if such exist, with guano water, 1 lb. being dissolved in a gallon of water, and as it evaporates replenish them, and keep them full for three weeks. This effectual cure was first brought into notice by Mr. D. Thomson, of Archenfield. It is eligible for all descriptions of houses having evaporation troughs, and where there is none the paths may be kept wet with guano water. This sprinkled over the paths, walls, and put in the evaporation troughs, is an excellent preventive, and increases the vigour of the plants. Four ounces of Peruvian guano to the gallon will be sufficiently strong, and yet safe.

If there are no evaporation troughs and red spider appear, mix 1 lb. of flowers of sulphur with 1 oz. of gum arabic dissolved in a quart of water, make into a paste, and add to three gallons of water. Syringe the plants on a fine afternoon with this liquid so as to wet them thoroughly, shutting the frame close, and shading to prevent the leaves being scorched. The syringing may take place at 2 p.m. if shade can be given, but an hour later if none can be afforded. The sides of the frame or pit should be painted on the inside with a composition of sulphur brought to the consistency of paint by the addition of 4 ozs. of soft-soap in a gallon of water. This must be kept from the leaves of the plants, as soft-soap will destroy the foliage. Shut up early for a fortnight afterwards, and repeat the syringing with sulphur water within a week if it has been washed off the leaves in watering. This is an effectual remedy for red spider on Peach trees, whether in houses or against walls, adding 2 ozs. of soft-soap to every gallon of water, but omitting the soft-soap if the fruit is more than half swelled. This remedy must not be employed for Vines.

I will now say a few words in favour of a cheap remedy, and, I think, the best of all applications for destroying red spider—viz., soot. One peck of soot in thirty gallons of water applied every evening with a syringe for three weeks is a cure, and dusting the leaves with dry soot till they are quite black is still better, the foliage being previously wetted. For Strawberries in pots or in the open ground there is no better cure than strewing soot over the plants and soil till the whole is quite black. Violets, too, so liable to red spider, are effectually freed by a thorough dusting with soot, and it is a remedy, unlike many others, that acts as a manure. For this remedy I am indebted to the Journal and the Rev. W. F. Keadylyffe.

Opposed as some are to syringing Vines, and as it cannot always be practised upon them, other means must be adopted, though I never saw the least injury result from a daily syringing with clear soft water from the setting of the fruit up to the time of its changing colour, except where air has not been given early; then I have seen the leaves scorched and the berries spotted, but quite as often when no syringing was practised, for condensed moisture on the leaves and berries is as frequently the cause of scorching and spot as moisture from syringing, if not more so. Preventive measures being always the best, the house ought every season before the Vines are started to be thoroughly cleaned, the woodwork washed with soap and water, the glass cleaned with water only, for soapy water ought never to touch glass, and the walls should be washed with sulphur and lime in equal proportions, brought to the consistency of whitewash by adding 2 ozs. of soft-soap dissolved in a gallon of water. In addition to this I would strongly recommend keeping the evaporation troughs filled with 4 ozs. of guano to the gallon of water, sprinkling the floors at least once daily with the same liquid. Should red spider appear notwithstanding these precautions, a paint should be made of sulphur and 2 ozs. of soft-soap to the gallon of water, and the pipes being heated to a temperature of 140° or 150°, coat every part of them with the sulphur paint, and then

sprinkle them with water of the same temperature as the pipes until the house is full of steam and sulphur fumes. The house, of course, must be shut up closely. This may be repeated if necessary within a week. It is not necessary to syringe the Vines, but it may be done if the state of the crop allow. The walls should be painted with sulphur and soft-soap water, 4 ozs. of the latter being dissolved in a gallon of water. This paint must not be put upon flues unless it is quite certain that they will never be hotter than 160°, for should the sulphur ever burn it will destroy the foliage and, of course, the crop.

To destroy red spider in houses having no heating apparatus, the following method will be found effectual:—Take some 11-inch flower-pots, half fill them with fresh lime (unslaked), and place one at each end, and the others 8 feet apart along the front of the house. Pour water over the lime so as to cover it, and sprinkle a small handful of flowers of sulphur in each pot. In the morning syringe thoroughly, but if syringing cannot be practised, as when Grapes are ripening, make the floors, walls, and other surfaces quite wet. This is an excellent remedy but requires care, as if the sulphur ignite the foliage will be scorched. Be careful, therefore, not to put in too much sulphur, and to give enough water to the lime to thoroughly slake but not drown it.

Water is the natural enemy of red spider, it will prevent and destroy it. A moist atmosphere and a plentiful supply of water and nutriment at the root are the best means of preventing the attacks of this insect, and these conditions being afforded red spider will not be difficult to get rid of.—G. ABBEY.

(To be continued.)

NOTES AND GLEANINGS.

On more than one occasion we have asked for the attention of our readers to the LINDLEY LIBRARY, and we now place before them this circular recently issued by the Trustees. If they would publish a list of the works already in the Library, donors would know which to present that would not be duplicates.

“Notice is hereby given, that the Committee of the International Horticultural Exhibition having offered to invest the balance of the profits realised by that Exhibition over £1850, after presenting £1000 to the Gardeners' Benevolent Institution in the purchase of books to form a library in connection with the Royal Horticultural Society, and to be called the 'Lindley Library,' in testimony of the respect in which the late Dr. Lindley's memory is held, on the condition that the books so purchased, and any others which might hereafter be presented, should be vested in seven Trustees, and that the books should, under rules, be available for the use of the Fellows of the Society, and other horticultural students,—the Council agreed with pleasure to accept the offer, and appointed W. Wilson Saunders, Esq., a Vice-President of the R.H.S., John Clutton, Esq., the Hon. Treasurer of the R.H.S., Col. H. Y. D. Scott, R.E., the Hon. Secretary of the R.H.S., as their three Trustees; and the International Committee appointed Dr. Robert Hogg, Dr. Maxwell T. Masters, and Thomas Moore, Esq., to represent them; and the six having agreed, nominated Sir C. Wentworth Dilke, Bart., M.P., as the seventh, and the trust-deed has this day (May 5th, 1868) been signed. The first purchase made by the Trustees is Dr. Lindley's Botanical and Horticultural Library, at a cost of £600, and steps are being taken to make the library available. As the Trustees are unanimously of opinion that the addition of such a library to the Horticultural Society would be a great boon to students of Horticulture and Botany, and also materially promote the best interests of the Royal Horticultural Society, and as the Trustees wish to make it as perfect as possible, they think it right to call upon the Fellows of the Royal Horticultural Society to aid them with funds and presents of books, to extend the usefulness of the library which has thus been commenced.

“The Trustees have the gratification of being able to announce that Her Majesty the Queen has been graciously pleased to present to the 'Lindley Library' a botanical work of the value of twenty-five guineas.

“The Trustees are also happy to be able to state that already several Fellows of the Society, and other gentlemen, have promised valuable assistance, amongst others—

George Bentham, Esq., Pres.
Linn. Soc.
Rev. M. J. Berkeley
Messrs. Bradbury, Evans, & Co.
John Clutton, Esq.
Sir C. Wentworth Dilke, Bart., M.P.
W. M. Flaggate, Esq.
Dr. Hogg
Dr. Joseph D. Hooker, F.R.S.
G. W. Johnson, Esq.
Thomas Lee Esq.

N. Lindley, Esq.
Dr. Maxwell T. Masters.
Thomas Moore, Esq.
Prof. E. Morren, Liege.
W. Wilson Saunders, Esq., F.R.S.
Col. H. Y. D. Scott, R.E.
M. Henry Villard, Paris.
D. S. Williams, Esq.
Mrs. C. A. Chetfield, and
Mrs. Inwood Jones.

“Any presents to be addressed to The Trustees of the Lindley

Library,' Royal Horticultural Society, South Kensington, London, W.

(Signed)

JOHN CLUTTON
ROBERT HOGG.
MAXWELL T. MASTERS
C. WENTWORTH DILKE

THOMAS MOORE
W. WILSON SAUNDERS
H. Y. D. SCOTT.

“Trustees of the Lindley Library.”

— EVERY gardener knows the “Wardian case,” by the agency of which living plants have been introduced after half circumnavigating the world, and which had defied all efforts to preserve them, until that case was invented. Its inventor, NATHANIEL BAGSHAW WARD, died on the 4th inst., at St. Leonards, aged 77. He had been Master of the Apothecaries' Company, and one of its Examiners, for which duty he was additionally qualified by his botanical knowledge. He was also a Fellow of the Royal, the Linnean, and other scientific Societies, and for forty years vaccinator to the National Vaccine Establishment. He resided successively in Wellese Square, and Clapham, and in his houses he most strikingly demonstrated how healthfully plants may be cultivated in confined spaces, and in the smoky atmosphere of a city. He published “Observations on the Growth of Plants in Closely-glazed Cases.”

WORK FOR THE WEEK.

KITCHEN GARDEN.

EVERYONE who has had the benefit of the late rains will be planting, sowing, and thinning. As soon as convenient let the surface of the ground be well stirred with the hoe or fork, to prevent the moisture evaporating. The late very dry weather will have forced several matters upon the consideration of many, such as the importance of so choosing the site of a garden as to have a plentiful supply of water: the construction of tanks in gardens to receive the water from drainage, hot-houses, and frames. It is an ascertained fact, that in general as much rain falls on a dwelling house as will supply the inmates during the season. Why should such a fact not be taken advantage of in gardens? In most pit and frame grounds much valuable water is lost every heavy rain, which would be of great service for summer crops. The past season will likewise have demonstrated surface-watering to be insufficient, the importance of keeping the surface of the soil loose, and the great advantage of digging or trenching deeply for all the main crops. About the end of June and beginning of July, as the early Peas and Beans are cleared off the ground, is the usual time for planting out *Broccoli*, *Brussels Sprouts*, *Savoy*, &c.; but if room is scarce these may be planted out between the rows of standing crops that are expected to come off soon. No one ever thinks of planting any of the Cabbage tribe without first manuring the ground. *Calcivorts* are much sought after in places, but in some families they are never used. This is about the time to make the first sowing of them, and in many late situations it is high time to sow *Cabbages* to come in early next spring, but in good situations a fortnight hence will be time enough. *Celery*, another trench or two may be planted out, but a fortnight hence will be time enough for the main crop in most places. *Peas* and *Beans*, the earliest varieties of these should now be sown for the last time, but some Early Frame Peas may be sown as late as the second week in July, and if we have fine weather in October they will afford some dishes which will be very acceptable.

FRUIT GARDEN.

If the tops of shoots of Currants or Gooseberries should become infested with insects, as they often do about this time, the best way is to cut off the tops at once, which will do no harm to the bushes so late as this in the season. A good washing with the engine occasionally will be of service to the wall trees, and unless they are attacked by insects clean water is as good for this purpose as any mixture. See that the Vines never get loose or grow so long before they are tied in, and so with all wall trees. Put down the shoots of Cucumbers and Vegetable Marrows under hand-lights.

FLOWER GARDEN.

Everywhere in the flower garden the greatest order and neatness should prevail; not a dead or falling flower should be seen, not even in the wildest corner of the shrubberies. No plants requiring support should be a day without a new stick. The flowering of many of the annuals may be prolonged if their seeds be cut off as they begin to form; some, again, would do better if the strongest shoots were cut back all

over the bed or row. Never let *Salvia patens* come up with a centre stem; pinch this off close to the bottom, and half a dozen shoots will spring up instead of one. This is better than thick planting. Some people treat Hollyhocks in the same way, and by that means obtain great masses of late-flowering shoots. Chrysanthemums which have been planted out and are now growing tall may have their branches regularly pegged-out, so as to have the tips turned up preparatory to their being layered towards the end of next month. Continue to prick out seedling Auriculas in pans or boxes, shading them from the sun. Polyanthus may be parted now in showery weather, renewing the bed with decayed cow manure and leaf soil. The general collection of Tulips may now be taken up, provided the foliage has assumed a yellow hue; shake the soil from the roots, but do not yet remove the fibres or outer skin from the bulbs. Place them in their respective compartments in boxes, and wrap them in very thin paper. The late drought has been seriously against the Ranunculuses; any of which the foliage has begun to decay must be immediately taken up, or rainy weather will cause them to start again to their almost certain destruction. In sunny weather dust any of the flowers which it may be desired to seed with the pollen of the best-formed semi-double flowers that can be obtained. Follow the directions given last week as to Carnations, pinching off the laterals, disbudding, tying, keeping free from aphids if possible, &c. Put in pipings, marking each lot of cuttings, so that when the layers from which they are taken bloom, if they should chance to be "run," or full of colour, the pipings from such foul flowers may be destroyed.

GREENHOUSE AND CONSERVATORY.

Common Pelargoniums are now being struck from cuttings in the open ground round London, in multitudes. The old plants might also be shaken out of their pots; and planted in the open ground, to be taken up early in the autumn, so as to have them well established in the pots before winter, they would make excellent plants for forcing next spring. The mid-summer cuttings will make strong plants by next October, and if they are well encouraged early in the spring, they will make beautiful flowering plants by this time next year. All the best varieties of the Chinese Primrose should now be divided and planted out in a shady situation, in very rotten leaf mould, to be taken up next September for winter flowering. Seedlings of them should also be planted out now in spare pits, well shaded, there to remain till they all flower, when the inferior sorts may be thrown away. All the best specimen plants are still to be kept in-doors in the greenhouse, but the paths are flooded over every evening to keep the plants in a moist atmosphere, and when a portion of the hardier stove plants are introduced among them, the doors and ventilators had better be shut up late in the evening. All the coarser plants being now removed out of doors, more attention must be paid to the watering of the more delicate plants which are kept in-doors throughout the season; train out and stake them till you have them handsome in shape.

STOVE.

This is about the best time to perform any necessary repairs, painting, &c., as the greater portion of the plants may be safely removed into other houses; indeed, all plant houses ought to have a slight coat of paint annually. Any moveable sashes may be done from the outside, by turning them on purpose. The lights of pits or frames at work may be painted at any time in dry weather, by turning them in the same way. Many of the softwooded stove plants flower best while they are young, and about the end of June is a good time to propagate these for flowering next season. Plants in this house have their young wood so well hardened that they may have air largely every day. There is hardly a week till the beginning of August in which some plants will not want a shift into a larger pot.

PITS.

Prepare to make in these useful structures, a large plantation of choice and dwarf young plants turned out of their pots for two or three months, in suitable composts. One who has not seen the good effects of this plan can hardly conceive the improvement it makes in the plants, particularly on Heaths, Epacris, and other delicate plants which are difficult to manage in dry, hot seasons under the ordinary pot culture. It is advisable to syringe all plants here in the afternoon, and to leave the lights off at night where the hardier plants are, and only put them on about breakfast time. Most pot plants require to be somewhat screened from the sun out of doors for a few weeks, till the nights become a little longer, when the dews will, in a great measure, counteract the effects of strong

sun. For growing a stock of young plants in summer no structures are so good or economical as pits properly constructed. Place the pots on a bed of sifted coal ashes, and if clean moss free from slugs can be procured, it is an excellent plan to place a thin layer of it between the pots. After it is well damped you have a source of constant moisture, which, passing up among the foliage, is very beneficial to all plants in summer, and they require less shading when they are thus managed.—W. KEANE.

DOINGS OF THE LAST WEEK.

FITCHEN GARDEN.

FROM want of rain, Peas and some other crops are suffering, but less than might be expected in the scorching heat. With Peas and young Cauliflower plants our chief means of counteracting drought was *mulching* with grass and dry litter. In some cases, as with young Turnips, we shook dry litter thinly over the foliage to arrest the evaporation, and yet allow enough of light to pass to keep all healthy. A heavy shower would place the most of this sprinkling away out of sight close to the ground. Our strong Celery would have been planted out long ago but for the drought and the scarcity of water, as it is easier to water it when it stands thickly than when planted out in beds or rows. Lettuces we have sprinkled overhead thinly with clean litter to keep the moisture of the earth from so freely escaping, and gave a little water when it could not be avoided. In sowing Turnips, Lettuces, Radishes, &c., we have watered the rows after the drills were drawn, sown the seeds, covered them with the drier earth, and then covered all over with litter or mats until the seedlings appear. This plan is in many respects better than watering the ground on the surface, saves much watering, and secures moisture for the roots for a considerable time, even if the surface soil should become dry. If that surface be kept loose this watering the drills before sowing often saves all watering afterwards. Peas are generally treated in this way, and when well drenched they do all the better in such scorching weather if the surface soil is composed of dry earth rather fine and loose, which acts like a mat or other covering in preventing the moisture from so freely escaping. We never had first and second crops of Cauliflowers better, but they were mulched well with short dung, and then with dry litter wrought up as far as possible among their stems and on the ground immediately contiguous, so that the moisture that was evaporated was chiefly that which transpired from their large leaves. Potatoes are doing well.

Water and Watering.—Such seasons as this show clearly the impropriety of having large gardens in positions where little or no water can be depended on, except that which falls directly from the clouds, and must be secured in ponds and tanks. In all such cases, to keep plants at all near the mark, extra care and watchfulness and much extra labour are demanded. With all our care to lessen the necessity of watering, the indispensable watering is a heavy item of labour, as all the water must be wheeled in water barrels, and often brought from a distance in a horse-and-cart large barrel. In the latter case, to make the most of the horse, much labour must be employed to empty the barrel quickly, and in such a case water must often be applied at anything but the best time for watering, as the nearer the evening it is now applied the greater will be the effect of the watering, whether under glass or in the open air. We have watered in the open air during a scorching sun, merely to keep plants from suffering; but if even dry earth was placed over the moist, the water too quickly found its way into the atmosphere without the plants deriving the benefit which they would have done if they could have absorbed it quickly after the sun was getting low.

By means of piping in connection with a pump and pond we hope to lessen the labour of carrying and wheeling, but even then we shall be far behind those places where the watering chiefly consists in fixing a hose to a tap and so taking the water to where it is wanted. This, without great expense, cannot be done on the highest ground in the neighbourhood unless there is a stream in the valley, from which water may be sent by means of a water ram constantly at work. In all new gardens of any extent the water supply should form a subject of primary consideration. In these days of economy people are apt to compare the expense of one garden with that of another something similar in size, but they are very apt to overlook the great difference in labour when few and many crops are grown in winter, or when a house is appropriated to one purpose or to many purposes, there being in the latter case

a great increase of labour involved in moving; and secondly, they are very apt to forget the difference in watering, when water has to be carried into the garden, into houses, &c., and where little more is required than the dipping of a pail, or the turning of a tap.

As a matter of economy it is of first importance then in every glass house, or at least in every short range, that there should be a water supply. As respects ourselves, could we depend on the supply from ponds, and that could be done by increased drainage, a greater supply of piping from an elevated cistern filled by a force pump would in a short time save in labour all the expense for piping, cisterns, &c. We are no great admirers of merely having a tap in a house from which water may be had at pleasure. If the cistern is so elevated that you can apply a small hose on the top and merely have to walk round the house with the hose to give all the watering, all is well; but if the tap is merely to fill pails as wanted, there is apt to be a waste of water, or a waste of time in waiting for the pail filling, but all this is avoided when the pail is filled at once by a dip in a cistern or tank. On the same principle we look on a tap in a water barrel, to be wheeled by a man, as a nice-enough contrivance for an amateur, or a lady or gentleman, but quite unsuitable for a workman, who, by dipping, or turning the barrel on the pivots on which it is hung, would empty the barrel whilst a pailful or two were running from the taps. All such matters prove the importance, not only of a water supply, but having it so fully at command as to involve the least amount of labour, for in many seasons where all water must be carried, the cost of watering must be very great. The position of a garden is, therefore, of much consequence. On elevated ground there is less risk from spring and autumn frosts, but there is a greater risk of suffering from summer droughts, unless there are means of securing the rainfall, or of bringing water up the hill.

We must not omit to mention, that where water is most abundant there is a danger of using it too freely. We have seen crops in kitchen gardens suffering from almost a flooding daily with water from the hose fixed to a pipe. We have seen flower beds drenched in June and July by the same means from an elevated cistern, and yet they did not look any better, nor so well, in fact, as beds the plants in which had merely a little water at the roots once or twice a-week, and the surface stirred to keep the moisture in. We saw a year or two ago a flower garden watered overhead every night, and the plants were anything but flourishing in the baked caked soil. All such matters require discretion, and the injury done was most likely owing to the cold produced by evaporation in somewhat unnatural circumstances, as when we have natural waterings by rain we have the cloud that arrests evaporation, a very different affair from a wet soil and a scorching sun. Be this as it may, the facts remain, that it is of first importance in a garden to have water at command, as the ease and the difficulty in its application make a great difference in the labour necessary.

As regards *manure watering*, three or four cases have been brought to our notice of the injury done to plants and fruit trees from an over-dose of rich liquid. One person emptied the cesspools of a large stable on his Vine border, and apparently the roots will never want another watering. Another watered Cauliflowers freely with gas ammoniacal water, and they died by degrees, and left nothing for the cooking pot; and here is another correspondent who has ruined some fine Peach trees in pots, because he watered them from a cesspool connected with a stable, believing that the stronger the liquid was the better the trees would like it. From what we have seen of such liquid, altogether free from a drop of ordinary water, we would not have applied it without the addition of from six to ten times the quantity of pure water. The lesson to be learned from all this is, to make sure that all manure water is weak enough not to injure the roots. It is better to give it often, instead of too strong at any one time, and just as it is well for us to change our food, so plants like a change in the quality of their water. Soot, the droppings of different animals, superphosphates, guano, &c., furnish plenty of variety. If droppings are used fresh, they should ferment in the water for some days. Guano is safer used at the rate of an ounce to a gallon than stronger, if it is really good.

FRUIT GARDEN.

We have netted all our Cherries and all the earlier Strawberry, or the latter would never have been allowed to ripen; this, as already referred to, being the first time that we have noticed green Strawberries eaten and carried off in quantities. For the last few days our flocks of thrushes and blackbirds

have decreased, and many that appear are very weakly—scarcely deeming it worth their while to get out of the way, which we attribute to two causes—the green fruit not agreeing with them, and the great difficulty they must have in getting more nourishing soft food in the way of worms, slugs, snails, &c. Keens' Seedling Strawberry is now coming in; and just before it President and British Queen are doing good service in the front of the latest orchard house.

In the orchard house we dashed the glass a little with water just whitened, to lessen the quantity of water that would otherwise be needed inside; and though giving air early, we seldom opened the ventilators fully in front, as the less draught prevented such rapid drying. In the hottest days we sprinkled at midday the ground and the lower part of the trees in pots from the syringe, which cooled the house considerably. With abundance of water at command we should not have dulled the glass, though with large squares it is no bad plan in such scorching weather. Provided air is given early or left on constantly, we are not afraid of a high temperature during the day. We have finished some of our Cherry trees in pots, which were heavily loaded; and others are coming in rather too heavily cropped, and would have been better if more thinned. Plum trees in small pots are very heavily laden with fruit, and we have done little in thinning it. As we expected, some have dropped and saved us the trouble; but to have fine fruit we must thin. These trees have all been well mulched, as stated lately; and now and then we throw as much soot as can be held with the thumb and two fingers over each pot—say once in ten days, alternating it with as much of dissolved bones or superphosphate. These trees in pots we should like to pot afresh this autumn, if we gave them no larger pots, as they have not been potted for a number of years. We believe they might remain in the same pots for many years by top-dressing every autumn. The pots are fully half-plunged in the border to save watering, and all they have hitherto had done to them is merely lifting them up every autumn, so as to break all the roots that had run through the bottom of the pot in summer.

Proceeded with thinning late Grapes as we could get at them. The Peach house yielding nicely we sprinkle several times with water along the floor and path in the hottest days, and give plenty of air, netting the openings as the blackbirds had begun on the soft Peaches. Vineries have had no syringing, but the paths and stages were damped in the hottest days, and in the house where Grapes are coming in a little air is left on all night, and this prevents condensed moisture lodging on the berries. Many years ago we called on a friend one Sunday morning; he did not get up early that morning, and on entering the vinery the Grapes nearest the top of the house, nearly ripe, were found to be very wet. The sashes were drawn down to admit plenty of air, and the rapid drying of the bunches left watermarks on them, which disfigured them for the table. If a space of from half an inch to an inch had been left open all night at the top of the house for air, such condensation of moisture on the bunches would have been prevented.

ORNAMENTAL DEPARTMENT.

A trying time it has been for bedding plants. Some of our Pelargoniums lifted out of earth beds have shown a few withered leaves, and as yet we have allowed them to remain, as they shade the stems and the ground a little. With the little water at our command the plants on the whole have done very well, we rather think better than where they were watered every day in such weather. Even Calceolarias are holding their own well; but in their case we have commenced mulching the ground about them with a little rotten dung, which will keep the roots cool and moist. Give the Calceolaria coolness and moisture at the roots, and then it will be the better of all the sun it can get. We find that with our small supply of water carefully given the roots of the plants are pushing well, and the buds along the stems are nice and prominent, only waiting for a change of weather to throw out a profusion of short stubby flowering shoots. Pinks and Carnations we would have watered well if we could, but we have been forced mostly to content ourselves with surface-stirring.

How deliciously the air is scented with Pinks just now! They and Carnations and Picotees are best supported with twisted wires, as then no tying is necessary; all that is required is to place the stems in the twists of the wire, and they are held securely. For fine flowers the pod should be tied to prevent splitting. Cuttings or pipings should now be made, and the quickest way to do so is to catch the shoot with the left hand, and pull out the point of the shoot at the second joint with the right hand, when in general the cutting will be fit to im-

sert, and the old plant will be little disfigured, as the leaves conceal the wound made by pulling the cutting out at the joint. A shady place, a sandy soil, and a hand-light are the best conditions for insuring success. In a sunny spot shade during the day, and give a little air at night.

Ranunculuses will now need a considerable quantity of moisture. A firm, moist, well-drained soil is their delight. One of the best methods for securing these conditions in such weather is to loosen the mere surface, make some holes in it, and water the soil well, touching the leaves with the water as little as possible; and then as the surface becomes rather dry, cover with riddled rotten dung. This will keep the roots moist without the necessity of wetting the foliage.

As soon as possible we will have verandahs, corridors, conservatory, &c., fresh arranged, and thus get many Pelargoniums of the florist and fancy kinds out of doors, first in a shady place, and then in a sunny spot to harden the wood. Azaleas now in corridors will be removed to the conservatory, where they can be kept a little closer by themselves. In limited space it is impossible to give just what such plants like now without injuring others. Even an unheated glass house would suit such plants well that had growth to make, as a close moist atmosphere could be kept about them, and more air when needed. The sun can now make any place under glass a hot-house. A cold pit for grafting, inarching, and other purposes, in such weather is just as good as a hotbed.—R. F.

COVENT GARDEN MARKET.—JUNE 17.

HEAVY arrivals of rough goods are now coming to hand daily, much in a poor condition for want of rain. Strawberries and Cherries have also largely increased in bulk, and the demand for them has been very steady, and most of the stands have been cleared.

		FRUIT.					
		s. d.	s. d.		s. d.	s. d.	
Apples.....	½ sieve	2	0 to 4	Melons.....	each	4	0 to 3
Apricots.....	doz.	2	0	Nectarines.....	doz.	1	0 to 2
Cherries.....	lb.	1	0 to 2	Oranges.....	100	4	0 to 10
Chestnuts.....	bush.	0	0	Peaches.....	doz.	13	0 to 24
Currants.....	½ sieve	4	0	Pears (dessert).....	doz.	0	0 to 0
Black.....	do.	0	0	Pine Apples.....	lb.	6	0 to 10
Figs.....	doz.	4	0	Plums.....	½ sieve	0	0 to 0
Filberts.....	lb.	1	0	Quinces.....	doz.	0	0 to 0
Cobs.....	lb.	0	9	Raspberries.....	lb.	0	9 to 1
Gooseberries.....	quart.	0	4	Strawberries.....	per lb.	0	6 to 1
Grapes, Hothouse.....	lb.	1	0	Walnuts.....	bush.	1	0 to 15
Lemons.....	100	8	0 to 12	do.....	per 100	1	0 to 2

		VEGETABLES.					
		s. d.	s. d.		s. d.	s. d.	
Artichokes.....	doz.	2	0 to 3	Leeks.....	bunch	1	5 to 0
Asparagus.....	100	2	0	Lettuce.....	per score	0	6 to 1
Beans, Kidney.....	100	1	0	Mushrooms.....	per pottle	2	0 to 3
Beet, Red.....	doz.	2	0	Mustard & Cress, punnet	6	2	0 to 0
Broccoli.....	doz.	0	0	Onions.....	per bushel	3	0 to 7
Brus, Sprouts.....	½ sieve	0	0	Parsley.....	per sieve	0	6 to 1
Cabbage.....	doz.	1	0	Parsnips.....	doz.	0	6 to 1
Capiscums.....	100	0	0	Pears.....	per quart	0	6 to 1
Carrots.....	bunch	0	6	Potatoes.....	bushel	4	3 to 5
Cardiflower.....	doz.	3	0	Kidney.....	doz.	4	0 to 6
Celery.....	bundle	1	6	Radishes.....	doz.	0	6 to 9
Cucumbers.....	each	0	4	Rhubarb.....	bundle	4	0 to 8
Eodive.....	doz.	2	0	Sea-kale.....	basket	0	6 to 0
Fennel.....	bunch	0	3	Shallots.....	lb.	0	8 to 0
Garlic.....	lb.	0	8	Spinach.....	lb.	2	0 to 3
Herbs.....	bunch	0	3	Tomatoes.....	per doz.	4	0 to 4
Horseradish.....	bundle	3	0	Turnips.....	bunch	0	6 to 1

TO CORRESPONDENTS.

... We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

ADVERTISING HORTICULTURAL BOOKS.—"Is it not a very short-sighted policy on the part of booksellers, publishers, and authors of horticultural, &c., not to advertise their works? Many books on such subjects are reviewed by you and other journalists, but it is vain to look in your columns for an advertisement of the books themselves, and many parties, of course, would not run the risk of ordering books without knowing the price of same. I could quote endless instances of the want of information on this point.—W. H. B."

BOOKS (T. H. Donnan).—Keane's "In-door Gardening" details the management of stove and greenhouse plants. You can have it free by post from our office if you enclose twenty postage stamps with your address. (*A Young Gardener*).—Read Johnson's "Science and Practice of Gardening," and the "Cottage Gardener's Dictionary." If you write to Mr. Richards, Assistant Secretary, Royal Horticultural Society, South Kensington, he will give you information relative to the examinations. The two books we have named can be had from our office, post free, if

you enclose 2s. in postage stamps with your address. (P. Y.).—Lance's "Hop Farmer" is the only modern work on the subject that we know. (C. R. H.).—Lowe's "British Ferns" will answer your purpose.

GRAPES CRACKING (J. B. Chilton).—Your Grapes were so smashed in the letter we had difficulty in making anything of them. They appear to have what is called rust, and the tissue being hard and dry will naturally crack. Give air cautiously, and do not allow a cold current to pass over the Grapes early in the morning.

CHASSELES NAPOLÉON OR BICANE GRAPE (T. E. Partridge).—Mr. Knight is not a nurseryman, but now gardener to the Duke of Roxburghe. If you write to Mr. Rivers you may procure it from him.

MILDEW ON GRAPE (A Subscriber).—We have repeatedly eradicated the mildew from the berries by literally covering the bunches with flowers of sulphur in a soap plate held beneath them and rolling the bunches in them. The sulphur may also be dusted over the leaves, and the stems painted with a mixture of clay and water. The mildew berries will crack if they are not sulphured.

VINE LEAVES DISEASED (W. R. Lancaster).—Your Vine leaves are very curiously affected. It is a tendency to fasciation of the three principal veins in the middle of the leaf. It is very curious, and we shall have the matter investigated. Do not the Vines exhibit languor in their growth?

VINES IN AN ENGINE HOUSE (T. H. B.).—We would water the Vines outside, and in this hot weather we would damp the tiled floor inside the house, at least at midday, or whenever it dries quickly.

VINE CULTURE (P. S.).—You may now discontinue fires, the house being closed early, and a little air should be given all night. In dull damp periods a gentle fire or bed will do good, and especially later in the season, to thoroughly ripen the crop and wood. The stages, floors, &c., should be kept damp until the Grapes are advanced in ripening, and syringing the Vines in the evening with clear soft water until the berries change colour for ripening, air being given early in the morning. Good root action and the thorough maturation of the wood are essentials of Vine-growing. The Vines may be pruned as soon as the leaves have fallen.

AZALEA CULTURE (Idem).—Azaleas require to be placed in a house where there is a gentle heat, either flowering, and should be kept there until they have made good growth and have set the flower buds. In a house devoted to them the atmosphere, after flowering, should be kept closer, and moisture should be given abundantly. This is not the treatment required for Heaths, and we do not consider Azaleas and Heaths succeed well together. Azaleas should not be turned out of doors after they have made their growth, but be kept in a cool, well-ventilated house. Placing them outside will tend to keep down thrips, but it is not desirable to turn them out of doors in summer on that account; indeed, it is a bad practice.

MAGNET IN ONIONS (Idem).—Soot applied to the ground, giving a good dressing, so as to make the surface quite black, is the best preventive. It should be gently pointed in prior to sowing. There is no remedy; but as soon as the presence of the insect is detected, those plants of which the leaves have flagged and are turning yellow should be pulled up and burnt, and the beds watered with lime water, 10 lbs. of fresh lime being sufficient for thirty gallons of water, or the beds may be well watered with strong soap-suds, and then sprinkled with soot so as to make the surface quite black.

CAMELLIAS IN POTS AND IN BORDERS (Idem).—Camellias thrive quite as well planted in borders as in pots; good management is all that is required in either case, but there are instances when the best cultivators at times fail.

GRASSES (L. R.).—We know of no better volume on English and foreign Grasses than that by Miss Flax.

HOT-WATER HEATING (Idem).—We do not know any dealer in second-hand boilers. From 60 to 90 feet of 4-inch piping would heat your house if you did not propose forcing. Those who advertise in our columns would be the best to refer to. A small saddle-back boiler, new, would cost from 50s. furnace fittings 30s., and piping from 9s. to 1s. per foot, with extras for curves and bends.

GREEN COLOURING FOR GRASS (M.).—We cannot tell what the green coloring matter is which you saw on the glass of greenhouses in a nursery in your neighbourhood, but green colour mixed up with size water or even with milk will be the most of the summer. We have seen blue used with good effect, and would be glad to know what cheap colours could be safely and most easily obtained.

PEACH LEAVES BLISTERED (L. Hutton).—The leaves of your Peach tree are blistered and mildewed. Apply flowers of sulphur.

CUTTINGS OF PELARGONIUMS (L. H.).—We do not know where you can get cuttings of Variegated Pelargonium. You should try some florist.

MILDEW ON FERNS (G. J. S.).—Mildew on the stems is generally caused by the plants being kept in a close and a atmosphere. It may be destroyed by dusting with flowers of sulphur the parts affected. Mildew seldom shows itself on Ferns that we should be obliged by your sending us a frond with its stem infested with mildew as you describe. We make no charge for answering queries.

NECTARINES CRACKING (T. H.).—We should advise you to syringe only in the evening. Nectarines are much more apt to crack than Peaches. Probably the foliage of the trees is very dry, and the sun's rays fall directly on the fruit. In that case we would shade the portion of roof over them for a few hours, when the sun's rays fall not directly on the trees, and confine this until the fruit begins to ripen.

WOODLICE IN HOTBED (T. H. B. Don).—The "spiders" we think are woodlice. Nothing is so effectual as to tread the sides of the frame inside, making the soil very firm for a distance of 4 inches or so all around; and the first thing in the morning pour strong water against the sides of the frame inside, and on the floor portion of the bed. This repeated occasionally will thin their numbers considerably, and a board placed in the frame would keep them down.

ROSES AT PARIS (Kingsbridge).—The first fortnight in July is too late in any year to see the best gardens in the neighbourhood of Paris, but we may see in this exceptionally early season. The most worthy of notice are M. Charles Verdier and M. Eugene Verdier at Ivry, and Mons. Margottin at Bourg-la-Reine, the latter one of the best rosarians, and an hour's chat with him is a great treat. We hope for notes from an earlier visitor.

PLUM-TREE LEAVES WHITENED (T. G.).—The whitish or glaucous appearance of the trees sent us we think is caused by the late powerful sun heat, and the tree being in want of water at the root. We think a few good soakings of water at the root, and a thorough syringing with an infusion of 2 ozs. of tobacco in a gallon of water, would free the tree of the few aphides which we think exist on the tree; or you may syringe it with a solution of 2 ozs. of soft-soap to the gallon, and give a good syringing with clear water as often as you find convenient. There is no appearance of disease in the leaves sent, only there are traces of aphides.

SEWING AURICULA SEED (E. R. B.).—The seed should be sown in good time, say the beginning of March. The seed pans should be well drained, and filled to within an inch of the rim with rather light turfy loam merely chopped with a spade, so as to make it rather small, then fill to the rim with finely sifted soil to which has been added a little well reduced leaf mould or old manure. Give the pan a gentle tap on the potting bench, and make the surface quite smooth by patting it gently with the bottom of a small flower pot. Scatter the seeds tolerably thickly, and cover with not less than the eighth of an inch nor more than the quarter of an inch in depth of light soil. A gentle watering should be given, and the soil should always be kept moist but not wet. Set the pan on the front shelf of a cool greenhouse, cold pit, or frame; place it near the glass, and where it will not be shaded in any way. If the seed is good the seedlings will make their appearance in a month after sowing, but it may be more; and in eight or nine weeks they will need to be removed to a more shady situation, where they can have the sun up to 9 or 10 o'clock A.M., and be shaded during the remainder of the day. Keep them well supplied with water. At the end of June or early in July they should be pricked-off in a shady situation, planting them about 3 or 4 inches apart, and giving a gentle watering. Water moderately every two or three days during the summer.

HOUSE FOR CAMELLIAS (T. G.).—We should prefer the house upon which the sun's rays strike all day. The Camellias, and such Rhododendrons as Nuttallii and Edgeworthii, would succeed well in the same house. You can shade the cuttings, or have a glazed case within the house, which would be best, as the Rhododendron must have plenty of air.

BERBERIDOPSIS CORALLINA, and POINCEANA GILLESII CULTURE (T. G.).—Berberidopsis corallina succeeds admirably in a cool house, and in a compost of two-thirds fibrous loam and one-third sandy fibrous peat. It also succeeds against a wall in sheltered situations in the open ground, and is one of the handsomest evergreen shrubs introduced of late years. Poinciana Gillesii requires a cool house, a wall with a south or south-west aspect, or a warm sheltered situation. It then grows freely, and is of easy culture.

NARCISSUS ALBUS FLEUUS ODORATUS FORING (J. W. K.).—This very fine and sweet Narcissus may be forced as easily as any of the family, but should not be brought on too rapidly. It should be forced slowly, the plants or bulbs being taken up in October with balls, and potted in pots sufficiently large to hold them well. In November the pots may be placed near the glass in a cool house, and in December should be introduced into a house where there is a gentle heat, not forcing much until the flower buds appear; then give more heat, keep them near the glass, and give air freely. We hardly expect you will have them fine in February, but in March and April they will be very good.

PASSIFLORA MANIGATA (P. J. N.).—Passiflora (Troponia) manicata will succeed in a greenhouse, but not in a cool one, by which we mean a house in which no fire heat is employed. It will do well, however, in an ordinary greenhouse. Had we a border we should plant out, but brick-off a portion of the border so as to confine the roots, otherwise the plant makes growth instead of flowers. It should have good drainage, and be well supplied with water when growing; but when it has made good growth water should be gradually withheld and a state of rest induced, keeping it dry in winter. The shoots should not be allowed to become thick, but be kept rather thin and trained near the glass.

MELONS (Cocah).—These are difficult to keep true, more especially if two varieties are grown near each other. We had several kinds last year from seeds produced by Golden Perfection. We do not know Scarlet Perfection.

CALCEOLIC ACID (W. H.).—See a communication in our Journal to-day.

NEW PLANT (J. L. M.).—There is no rule by which to decide what is a "new plant." One discovered two years before the award was not wrongly admitted.

LONICERA JAPONICA AUREO-RETICULATA (J. Gooden.).—It is blooming, is quite common.

ROSES (James Phillips).—We cannot name florists' varieties. Your seedling is not equal to many others, and would not sell.

WATERING WITH TEPID WATER (Alacer Fallax).—There is an advantage in using heated water out of doors, until, as now, the natural exposed water is warm enough. The genus Callirhoe was named after the daughter of Scamander, a Grecian fabulous character.

TARDES.—"R. P." is much obliged to Mr. Hall. Nothing is further from his intention than controversy; but the mystery is still unexplained, as he knows the signs and the sight of things too well to be deceived in anything respecting them. He would know by the appearance of a leaf whether thrips had been there or not. Thus far it should be stated that the plants that suffered in these two lights were from old seeds, but a plant from fresher seed, and the same as flourished in frames, &c., was affected in the same way. There may be something in the glass, but nothing else has suffered except Melons; and the same thing has happened for several years as respects the first crop. "R. P." believes that getting the foliage dry in certain circumstances as those referred to is of first consequence.

LARGE FRAGRANT ROSE (A Lady in Cheshire).—"I recommend Charles Lechvre. It is red, has the desired qualities, and can be pot-grown. It has no equal. Senateur Vaisse and Madame Victor Verrier are also good. As a pink rose Jules Margottin has no equal. Anna Alexici is also large and fine, and good for your purpose. Of a rose-colour Baronne Prevost would suit. John Hopper rose with crimsonish centre, is splendid. These all would supply what you require—namely, the earliest, largest flowering, and most fragrant roses to be grown in a pot to be placed in a hall when in flower." They are all fine-constituted, free and abundant bloomers. I advise you to have also Prince Camille de Rohan, dark velvety maroon or purple—the largest, finest, and handsomest dark rose known.—W. F. RADCLIFFE."

NAMES OF PLANTS (Richard Graves).—Your plant is Clitoria ternatea, and has been long in the country.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending June 16th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 10	30.141	30.128	81	78	60	57	N.E.	.00	Clear and fine; very fine; fine at night.
Thurs.. 11	30.155	30.118	77	59	60	57	N.	.00	Very fine; overcast; clear and fine.
Fri... 12	30.183	30.135	85	48	60	57	W.	.00	Very fine; excessively warm; fine at night.
Sat... 13	30.153	30.110	84	47	61	57	S.W.	.00	Clear and fine; very fine; fine; very clear at night.
Sun... 14	30.115	30.084	82	48	62	57	N.W.	.00	Fine; very hot; clear and fine
Mon... 15	30.179	30.115	80	46	63	57	N.	.00	Very fine; cloudy but fine at night.
Tues... 16	30.206	30.125	81	48	63	57	N.E.	.00	Overcast; hazy; overcast; fine, very clear.
Mean	30.165	30.113	81.71	43.43	61.28	57.00	..	0.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

HANTS AND BERKS POULTRY SHOW.

ALTHOUGH our province is with poultry, it may not be out of place to take some notice of these events with which it is intimately connected; and above all to express our satisfaction if we find our favourite subject following the track in which we have always wished to find it. Poultry and agriculture would seem to be intimately connected, inasmuch as the occupier of land has facilities denied to others. If, then, those who have the disadvantages of limited space, and the necessity of buying every article of consumption, can find it a self-supporting hobby, those who have food produced at the lowest cost, and the space gratis that others would be content to acquire at a considerable cost, should find a large profit. Poultry, at last, is urging its claims on the public at large; and while we repeat that which we have often written—that poultry will never become an article of general consumption, we may say that the hundreds, ay, thousands of pounds sent abroad might with a little painstaking be kept at home. When we say it will never be an article of general consumption, we would not be thought to admit for a moment that there will not be always good sale for all that can be produced. Eggs are things of general use, and these can be produced by the farmer at a nominal cost. The age of pooh-poohing these things is passed away, and the increase of

the Show with which we have to do will prove it. From the small exhibition of a few pens, some five or six years ago, it is now a considerable exhibition, numbering 226 pens of choice birds from all parts of the country. This would prove nothing, as the exhibitors might be amateurs from many towns; but the fact in which the birds were located was a chief point of attraction, and the conversation that could be heard through the canvas walls before it was opened was new. It showed that poultry was rising, and taking as it deserves to do, its place besides the quadruped denizen of the farmyard.

Copying a powerful neighbour, the Society with which this Show is connected has become peripatetic, visiting the chief towns in detail. This year the Show was held at Winchester, and with the remark that there was an excellent show of cattle, a large exhibition of implements: that the band of the 60th Rifles lent its attractions, and that the weather brought so many spectators that the meeting was a success and a pleasure, we will pass to the consideration of that which is our especial duty.

The day is gone and past when the success of one was rendered easy by the mistakes or shortcomings of the others. All understand their work, and those who were successful were so by force of merit.

The Dorking exhibitors showed many of our best names. It will hardly be marvelled at, that the first prize went to Surrey, taken by Mrs. Norris, the second to Col. Lane. The list we publish will show the commended, they were deservedly numerous.

Twenty good pens competed for *Game* honours, and we have seen many worse classes at very large shows. All colours were well repre-

sented and all countries, proof of which may be seen by the fact the first prize went to Warwick, the second to Dublin.

The *Game* classes were excellent. Here, again, there were no errors in judgment to make decisions easy. The Black Reds held their own well against the Brown Reds, and the merits of the Duckwings as *Game* birds was almost equalled by their merits as birds of feather.

The *Polands* were very good, but brought only six entries. The *Spanish* shown were worthy of any exhibition. The same may be said of the Golden *Hamburghs*, Pencilled and Spangled, but the Silvers hardly maintained their reputation.

There were twenty-two pens of *Brahma Pootras*, twelve Light and ten Dark, showing most of our leading exhibitors in both classes. The names, however, that mostly stand in the front rank did not on this occasion.

Fifteen pens of excellent *Game Bantams*. Here we would warn exhibitors these birds must not drop their wings like *Sprights*. Two cocks shown would seem to have been chosen for this bad quality. They were otherwise excellent birds. There were fifteen pens of "Variations" Bantams, some of them beautiful specimens. The first-prize pen were highly meritorious.

The French fowls were good. The *La Flèche* are losing ground—one pen only was shown. The *Houdans* were not so good as the *Crève-Cœurs*.

There were all sorts of curiosities and many very pretty "oddities" in the class for Any variety. The *Ducks* were excellent. There was also an excellent show of *Pigeons* and *Rabbits*.

DORINGS.—First, Mrs. E. G. Norris, Hatchford Parsonage, Cobham, Surrey. Second, Lieut-Col. Lane, Bracknell. Highly Commended, Lieut-Col. Lane; Miss J. Millward, Newton, St. Lee, Bristol; D. C. Campbell, M.D., Brentwood.

COCHINS.—First, Rev. S. C. Hamerton, Warwick. Second, C. F. Staunton, Clonsalkin, Dublin. Highly Commended, Mrs. Christie, Glyndelourne; W. W. Pyne, Lancing; S. A. Wyllie, East Mousley; H. Yardley, Birmingham. Commended, F. G. Stebbing, Fleet, Winchfield; E. W. Boys, Winchester.

GAME (Black-breasted and other Reds).—First, W. W. Pyne. Second, H. Lee, Appledrambe, Isle of Wight. Highly Commended, H. C. Dear, North Stoneham Park, Southampton; Rev. G. S. Cruwys, Tiverton. Commended, T. R. Hulbert, Old Alresford; W. H. Stagg, Netheravon; Rev. G. S. Cruwys; S. Matthews.

GAME (Any other variety).—First, S. Matthew, Stowmarket. Second, Miss Hales, Canterbury. Highly Commended, Rev. G. S. Cruwys.

POLANDS.—First, Mrs. Pettatt, Ashe Rectory. Second, T. P. Edwards, Lyndhurst. Highly Commended, Mrs. Pettatt; D. Mutton, Brighton. Commended, Mrs. Pettatt.

SPANISH.—First and Second, F. James, Peckham Rye. Highly Commended, Rev. J. De L. Simmonds, Chilcomb Rectory.

HAMBURGERS (Gold-pencilled).—First and Second, F. Pittis, jun. Highly Commended, Miss Hales.

HAMBURGERS (Silver-pencilled).—First, H. Pickles, jun., Earby, Skipton. Second, F. Pittis, jun.

HAMBURGERS (Gold-spangled).—First, H. Pickles, jun. Second, T. Walker, jun., Denton, Manchester. Highly Commended, H. Lee.

HAMBURGERS (Silver-spangled).—First, H. Pickles, jun. Second, H. Lee.

BRAMA POOTRA (Light).—First, H. Dowsett, Pleshey, Chelmsford. Second, H. M. Maynard, Holmwood, Ryde. Highly Commended, J. Pares, Postford, Guildford. Commended, Miss Harvey, Sarisbury, Southampton.

BRAMA POOTRA (Dark).—First, J. H. Croft, Metropolitan Cattle Market, London. Second, J. K. Fowler, Aylesbury. Highly Commended, Lieut-Col. Lane. Commended, S. A. Wyllie, East Mousley.

GAME BANTAMS.—First and Second, F. Pittis, jun. Highly Commended, G. Johnson, Farnham, Surrey; Rev. G. Rayner, Tonbridge, Kent.

BANTAMS (Any other variety).—First, Miss Hales. Second, Messrs. Lonkin & Tuckey, Bristol. Highly Commended, H. M. Maynard; Capt. E. J. Baker; Rev. G. S. Cruwys; Messrs. S. & R. Ashton, Nottram; Mrs. Pettatt. Commended, Mrs. St. John.

FRENCH.—First and Third, Col. Stuart Wortley, Grove End Road, London. Second, J. K. Fowler (Crève-Cœurs). Highly Commended, J. Burghope, jun., Stroud (Crève-Cœurs). Commended, Mrs. St. John; H. M. Maynard (Houdans).

ANY VARIETY NOT BEFORE MENTIONED.—First, J. Binton, Hinton (Malays). Second, Col. Stuart Wortley (Fringed Japanese). Third, Mrs. St. John. Highly Commended, F. Pittis, jun. Commended, J. Pares (Silkies); Mrs. Morant.

DUCKS.—First, J. K. Fowler. Second, Mrs. E. G. Norris. Highly Commended, F. Pittis, jun.; Mrs. Morant. Commended, Mrs. Morant; J. K. Fowler.

PIGEONS.

CARRIERS.—First, H. M. Maynard. Second, H. Yardley. Highly Commended, J. Lufkin, Farnham.

TUMBLERS.—First, J. Lufkin. Second, H. Yardley. Highly Commended, G. Hill, Winchester; E. Shearn, Chelmsford.

FANTAILS.—First, H. M. Maynard. Second, H. Yardley. Highly Commended, Miss J. Millward; H. Yardley; W. S. Loder, Bath.

TRUMPETERS.—First, E. Shearn. Second, H. Yardley. Highly Commended, A. P. Maurice; G. Hill. Commended, H. Yardley.

MAGPIES.—First, H. Yardley. Second, F. Pittis, jun.

ANY VARIETY NOT BEFORE MENTIONED.—First, S. Loder. Second, J. Lufkin. Highly Commended, H. Yardley; W. S. Loder; H. Yardley; F. Pittis, jun.

RABBITS.

LONGEST EARS.—First, G. Hill. Second, G. Jones. Commended, C. Gravel, jun., Thorne; F. James; H. Yardley.

FOREIGN.—First, Mrs. Churcher, Stratton, Mitcheldever. Second, H. Yardley.

VARIETY, TO INCLUDE ALL POINTS.—First, G. Jones. Second, C. Gravel, jun. Highly Commended, G. Hill; A. E. Smith, Gosport. Commended, Master E. J. Bennett, Chilmark, Salisbury.

Mr. Bailly was the Judge.

POULTRY CULTURE.

At a recent meeting of the Food Committee of the Society of Arts, B. Shaw, Esq., in the chair, Mr. George Manning, of Springfield, attended, and gave information respecting Poultry Culture as follows:—

Mr. Manning said.—In looking for new sources and for the farther development of the old means of animal food, I cannot but think that poultry claims our attention before many others, as having once formed an important part of our meat supply, as being simple and inexpensive in culture, and everywhere ready to hand. Of late years, however, poultry has fallen into neglect; and this kind of meat can now be procured at such prices only as to render it an expensive luxury rather than a reasonable portion of daily food. The farmyard seems to be the proper home of the avian order of birds; yet it is here that the neglect is most evident, whilst farmers, for the most part, deny the usefulness of this portion of stock, and tolerate it only from habit. It is not only the farmer, however, who raises objections to this kind of food. The consumer has certain prejudices. On the part of the farmer it is said:—

1. That poultry stock does not pay.
2. That even if it did pay it is too unimportant to engage his attention.
3. That it damages the stock yard.
4. That it is injurious to the crops.

On the part of the consumer it is urged:—

1. That the retail price of poultry is such as to place it out of the list of daily foods.

2. That, even if it can be produced at reasonable prices, it is a poor substitute for butchers' meat, and does not contain sufficient animal nourishment.

If poultry-keeping does not pay, and under existing circumstances in the majority of cases it probably does not, the reasons are to be found in the following facts:—

1. That no attention is paid to the choice and management of stock.
2. That food is irregularly and wastefully administered to it.
3. That no regard is had to the roosting, and particularly to the laying, places of hens.
4. That the demand is restricted by the market system.
5. That farmers' wives have ceased to be henwives.

With regard to the choice and management of stock in poultry, we find on farms generally, mongrel-bred birds, which, from continued in-breeding, have deteriorated in size and stamina. The barndoor fowl of the olden time has changed, particularly within the last few years, becoming continually less useful for food. It is true that the barndoor fowl was always a mongrel; but when farmyards were the nurseries of fighting cocks, where landlords, by covenant inserted in the leases, required the tenants to "walk" a Game cock, or number of cockerels, and tenant farmers bred birds for the pit on their own account, there was a continued infusion of new and vigorous blood into the progeny of the hens that stocked the yard. That custom has happily nearly passed away. The deterioration, however, begun by the loss of these high-bred cock birds, was completed shortly after the Cochinchina mania, when by the introduction of cock birds of this variety (valuable as the hen birds are for certain purposes), a race of spare-breasted, leggy birds has been the result, wanting the chief merits of a table fowl. Again, when the flail and a careless system of farming made the barn door a golden feeding ground, chickens had opportunities of growth which they now have not, and which must be supplied to them more economically and judiciously by hand if rearing poultry is to be profitable. This, plan, however, has been neglected, for poultry, unlike other farm stock, has not only not advanced, but has gone back in value, and consequently in estimation. The average weight of barndoor fowls sold from farmyards is 3½ lbs. From this must be deducted 3 ozs. for feathers and 12 ozs. for offal before they become food. The Game cock, as bred for the pit, rarely exceeded 4½ lbs.; but by crossing with the Malay they may be brought to 6 lbs. or 7 lbs. in weight. Dorkings, when not inbred, but well and carefully fed as chickens, will reach to 7½ lbs. as pullets, and to 9 lbs. as cockerels; higher weights, such as 10 lbs. for hens, and 12 lbs. for cocks, can be obtained, but these are exceptional. Dorkings, however, are not suited for cold clays and damp soils. Of food birds, besides Dorkings, the Game and the large Surrey and Sussex fowls (which last always command a high price), there are the *Brahma Pootra* fowl and the *Houdan*, or French Dorking, well adapted for use. Of these the Dorking and Surrey fowls are beyond all question the best for the table, in delicacy and weight of flesh; the Game the most savoury, although deficient in size; the *Brahma Pootra* not so delicate in flavour as the others, but hardy, weighty, and easily fattened; the *Houdan* having the good without the bad qualities of the Dorking—precocious and small-boned, being non-sitters, and almost uninterrupted layers of large eggs. The *Brahma Pootra* seems to be a useful stock on which to build other varieties. Of these, the cross with the Dorking is most strongly recommended; and a cross with the *Houdan* produces table chickens of a fine size. At the last Chelmsford and Essex Poultry Show, the birds which took the first and second prizes for dual poultry, trussed as by poulters, but not drawn, were, the one 13 lbs. 12 ozs., the other, 13 lbs. 10 ozs., the pair at five months old. They were the direct offspring of a *Brahma Pootra* cock bird and Dorking hens. For stock it would be a better plan to put a Dorking cock with *Brahma Pootra* hens, and the pullets of this union with Dorking cocks in no way related to the ancestors of the pullets.

Very hardy and weighty table birds may thus be produced. By answers to inquiries, and by reference to the books of a farm including the last six years, I find that the average price paid by bidders for barn-door fowls of the average weights first mentioned is 2s. for coop-fed, and 1s. 8d. for yard-fed birds. The cost of feeding and rearing the prize birds at Chelmsford was probably very little, if at all, more than that of raising the others. With regard to feeding, our system of leaving chickens to shift for themselves until such time as they are ready or wanted for the coop is all wrong. No attempt at after-tattening will increase frame if the feeding of infancy has been disregarded. Again, the indiscriminate emptying of apronfuls or sievefuls of grain in a heap on the ground, whilst it serves to gorge the powerful, leaves chickens and weaker birds to starve, picking up here and there a grain, whilst sparrows and small birds have a large share in the feast. I see that Mr. Mechi has published the results of an experiment in the cost of feeding a single hen, shut up and without access to any food but that which was given by hand. The result shows that 5 lbs. of barley at the average of 1d. per lb. (or 10s. the quarter), will make 1 lb. live weight of poultry food, worth 9d. per lb. I say it is quite practicable to feed poultry more cheaply, and consequently to sell them cheaper than shown by this method—that is supposing them to be at large; but I am sure Mr. Mechi will pardon me for saying that I think this statement of feeding in confinement is rather low, a circumstance which may arise from the fact that the bird pined at first. I have tried the same experiment with two pens of birds, consisting of a cock and two hens, confined for a long time to separate but very small wired pens. I tried it in March last year, and in the month just ended, and I found that my birds consumed about 3½ pints to his 2½ pints in the week; but then I dare say the barley I used was of foreign growth, and of much lighter bulk. Birds having a free run would cost very considerably less. I must not occupy your valuable time with the details of what is necessary for the housing of birds and, for their places of laying and incubation. It will be enough to say that they should be, what they are seldom in farmyards—namely, cleanly, convenient, and attractive.

Captain Grant: Do you think a hen's nest should be high or low?

Mr. Manning: It should be on the ground, if there is no danger from rats, for laying and also for hatching; and the roosts should be low, particularly when they are heavy birds. I believe the sore and injured feet, which are not unusual in large poultry, are often caused by their jumping down almost perpendicularly from a high roost. Fowls will always choose the highest perch, probably because it is the warmest, and when this is in a large open shed, as a cart lodge, they have room for some length of flight before reaching the ground, but in a small poultry house they come down very heavily. If the perches are arranged in steps one above the other they will jump them one at a time until they reach the highest, but they will not come down that way. I do not approve of artificially warming the fowl house; it should be well built, and brick is better than wood, being warmer, and more easily cleaned; but I think if the introduction of hot-air pipes is allowed it must produce such a warmth that on going out into the cold air the fowls are apt to get chilled, and to have an attack of the "roup."

Mr. Hoskyns: I have a small fine passing through my fowl house, and I find that it tends to improve the regularity of laying, and does not produce any ill effects.

Mr. Manning: It may be useful if very judiciously employed, but I am always afraid of it. It would depend, too, on the breed; the Brahma Pootra and Cochins are very hardy, whilst the Dorking is very delicate. On the point that the demand for poultry is restricted by the market system, I would call attention to the fact that poultry produce stands at a costly rate to the consumer, and at a poorly remunerative one to the producer, by reason of the irresponsible middle men through whose hands it passes before it reaches the retail seller. Again, in its perishable nature the producer is liable to much loss in a dull or a glutted market. In this matter I would venture to suggest the establishment in London, and the great towns of the United Kingdom, of wholesale markets, either apart from or in connection with the meat markets, subject to police and other regulations, to have sales by auction, so that no part of the consignment need be returned to the producer, or destroyed as unfit for food; to extend the same principles of markets and sales to other towns in the kingdom on their market days. One of the reasons already given for the neglect of poultry stock was, that farmers' wives have ceased to be henwives. Perhaps in the altered state of society it is unavoidable. It is, however, to be regretted. But poultry-growing, as a part of farm stock, and an item of our daily food, will need masters rather than henwives. I mean that if it were carried on by the husband as a regular part of his business, he would feed his poultry the same as he does his horses and his stock; but when it is left to the wife, there is often a complaint of the quantity of food required for the poultry, and a little sly barn robbery the result of waste.

Mr. C. W. Hoskyns: But part of the economy of poultry-keeping consists in the fact that the wife is able to attend to it.

Mr. Manning: Oh, yes; and it should be so. There is nothing in the management of poultry which goes beyond an ordinary woman's capabilities; the only thing is to see that they have food enough without waste, and that chickens are carefully reared.

Mr. Hoskyns: Are there not many oleaginous seeds which might be used with advantage in feeding?

Mr. Manning: Yes; I have tried bran or buckwheat, which is very good, and so is Indian corn. Cheapen a necessary of life, and a demand follows instantly; this is a maxim illustrated every day. Simplify the market system and improve the means of production; you will then remove the consumer's first objection—viz., price. The second objection as to nutriment is answered by the fact that, as a flesh-forming food, poultry is more nutritious than beef. It is only inferior to beef as being less fattening, for it contains a little less water, a fraction per cent. less albuminous matter, and a greater proportion of salts. To the remaining objections urged by the farmers, that poultry damage the stack yard, I have little hesitation in saying that this is a mistake where stacks are set upon frames, and birds regularly and judiciously fed. The other—namely, that poultry damage the crops, will, I think, receive a conclusive and practical answer from Mr. Mechi. Mr. Mechi keeps three hundred head of poultry, which have free access to the fields near the homesteads, and he buds that they do more good than harm. With regard to the system of sales by auction, this plan has already been adopted by Messrs. Broome & Co., meat and poultry salesmen in Newgate Market. Their manager, Mr. Brooke, has been in Normandy, and the other poultry districts of France, to ascertain the French methods of feeding, and of poultry management generally, which appear to be more systematic and economical than our own. Messrs. Broome have kindly consented that their manager should attend before you, if desired, to give any information that may be of value. Taken in connection with the statements of the weight and the cost of rearing barn-door fowls, it may be useful to place side by side the prices quoted in Newgate and Leadenhall Markets at two periods of the year, which will represent plenty and scarcity of produce.

Sept. 21st, 1867. March 27th, 1868.

Surrey fowls, per couple	10s. to 12s.	10s. to 12s.
" chickens "	5s. 6d. to 7s.	6s. to 8s.
Barn-door fowls "	4s. 6d. to 6s.	5s. to 7s.

Mr. Mechi is now getting 7s. 6d. a-pair wholesale for chickens. It is impossible at present to procure any reliable information with regard to the home produce and the consumption of birds and eggs in this country. It has been variously and vaguely estimated. The story of our imports, however, tells a startling tale:—

In 1849 we imported	98,000,000 of eggs.
In 1866 "	488,878,880 "
In 1867 "	397,984,520 "

The cause of this reduction in last year's imports I am not prepared to give. The price of English eggs per hundred in Newgate and Leadenhall Markets varies from 6s. 6d. to 13s. ordinarily in the season: the difference between the prices of English and French eggs being, for the most part, 1s. per hundred. The custom-house return of eggs and poultry imported in 1866 (the totals, except in the case of eggs, not being yet made for 1867), gives the following details:—

Eggs.		Great hundred.
Imported from		
Hamburg	16,630	151,733
Belgium	3,359,302	80,055
France	31,840	17,764
Channel Islands		
Other parts		
Hundreds	3,657,324	
Long hundred	120	
Eggs	488,878,880	
POULTRY.		Value.
Imported from		
Holland	£16,815	
Belgium	97,082	
France	58,210	
Other parts	4,564	
	£174,971	

Value of eggs (at 6s. 6d. per 120), £1,188,630; total value of eggs and poultry imported in 1866, £1,263,601. If the foreigner can undersell us in our own markets in eggs, and can send a very large amount in value of poultry into this country; if our own eggs, in spite of this competition, maintain invariably a higher price, it is beyond question that there is—at all events, in our own production—a demand unsatisfied, and a profitable source of food neglected. I have made several inquiries into the matter of artificial hatching, and I am not satisfied with the results. The great difficulty is in rearing the chickens when they are hatched. We have no evidence to show whether the cultivation of poultry is increasing; there are no returns of the quantity sent into the market, and it is impossible to get accurate information from the farmers to a sufficient extent to form an opinion. If you took the railway returns you would probably be unable to separate the home-bred from the foreign poultry.

The Chairman: Before proceeding any further with the discussion I will read a letter which we have received from Mr. Mechi, which is as follows:—

"Tiptree Hall, near Kelvedon, Essex,
"March 21st, 1868.

"MY DEAR MR. FOSTER.—I am not often in town, but hope to be so in a week or ten days, and will endeavour to meet the Committee. My experience teaches me, first, that there is an abundant demand for poultry in our markets, even at the present extravagant prices; that while poultry sells at fully 9d. per lb. live weight, the best beef and

mutton only at 4d. per lb. live weight (5s. per stone of 8 lbs. nett dead weight); that it costs no more to produce 1 lb. of poultry than 1 lb. of meat; that poultry are the farmers' best friends, consuming no seed of insects, and utilising and economising all waste grain; that they should have free access to pasture and to our other fields near the homestead; that care should be taken as to their breeds, as in sheep, bullocks, and pigs; that first crosses, having regard to the demands in the market, are advantages; that the manure from poultry is of first-rate quality. My poultry (about three hundred) have free access to my corn fields at almost every period of the year. Of course, poultry, like sheep, bullocks, or pigs, must be well and properly fed if they are to be well developed in size and condition. I do not know that I could say more than this to the Committee.

"P. Le Neve Foster, Esq."

"Yours faithfully,"

"J. J. MECH."

Mr. Chester: There is no doubt that in France there are a great many more eggs and poultry produced than in England, compared with the population. I should like to know what is the reason of that; and whether we could, by putting out any practical suggestions, increase the supply. We shall not see the price reduced or the distribution improved until the number produced is increased.

Mr. Wilson: I think the cottier system, which is so prevalent in France, is very favourable to the production of poultry. Have you ever tried the experiment, which, I believe, has been tried in France, of having a moveable poultry house, which can be taken from field to field?

Mr. Manning: I have not tried it, but I should think it would be very successful. The only objection is that the poultry are left unprotected. My attention has been principally directed to poultry kept in small places, and I don't think it can be carried on profitably in that way, because all the food must be purchased; you must then sell at fancy prices. If a considerable number are kept in a confined place, there must be some arrangement for changing the soil, which, in most cases, would occasion a difficulty. I kept three Cochins-China fowls for about three months in a small space about 1 ft. by 1 ft., with a little bed behind for roosting; but then I had the droppings continually removed and the soil constantly dug up. The prices paid to the producer by the higgler are 2s. for a coopful, or 1s. 6d. for a running fowl, weighing on an average 3½ lbs. I see no reason why poultry should not be sold by weight; I think it would be a very great improvement if all provisions were required by law to be sold by weight. The size and weight of the eggs from a Spanish and a Hamburgh fowl are very different, but they are all sold at so many for a shilling; and a retail dealer told me that he allowed a good customer to pick out which he liked. I have used Indian corn for fowls, and it answers very well, but just at present it is very dear. You cannot always keep to the same kind of food, whatever it is. In Sussex they use a good deal of bruised oats; I have used a mixture of bruised oats, rice, and toppings, with success. I doubt the advantage of feeding fowls with meat; the kind of flesh which the fowl picks up naturally is very different to anything we could give them. I have seen the reports of the large poultry farm in France, and I know them to be wholly untrue. I am certain that no experiments have been made on a large scale in this country to feed poultry on horseflesh mixed with farinaceous food, but I cannot say what has been done abroad. Graves and other animal food have been given to force the laying of hens, but I believe the tendency is to wear out the hen very quickly.

Mr. Wilson: Would it not answer to do that? To get all the eggs you can, and then fatten the fowl for table?

Mr. Manning: Perhaps it might. An old hen may be made to eat very well by boiling it first, and then roasting it. I keep breeding fowls about three years, then I sell or eat them. The eggs are not so good for breeding from the first year as the second and third; in the fourth year they begin to fail, according to the constitution of the bird. The best breed for cold clay soils is the Brahma Pootra or the French sort, the Houdan. I think a cross between the Brahma Pootra and the Dorking gives the most useful bird for farmyard purposes. The Brahma has a good deal of the Cochins-China in it; it lacks breast a little, but not so much as the Cochins; and when crossed with the Dorking it produces a very fine bird, with all the hardihood of the Brahma Pootra and the meat properties of the Dorking. If the soil is good, no bird would answer better for a cottage than the Dorking. Lime must be supplied, of course, if it is not naturally present in the soil, where birds are in confinement. I have had no experience with Ducks, Geese, or Turkeys. I think poultry-keeping would be carried on more successfully on a large scale than by individual cottagers.

Mr. Wilson: Is there not a great tendency to epidemics amongst poultry kept together in large numbers?

Mr. Manning: I think Mr. Mechi would answer that by saying, not if the yards are kept well supplied with lime and salt. If the fowls were free to run in the fields it would be a long time, indeed, before the ground became tainted. It would be almost an impossibility.

Mr. Wilson: Should you feel inclined to go into the speculation to the extent of thousands?

Mr. Manning: I think Mr. Mechi could answer that question better than I can. He has three hundred. I think the great difficulty with small farmers would be in finding a good and ready market. The large breeder has a salesman in town, to whom he sends his produce; but the cottager and small farmer might not have those opportunities; they must depend on the middleman or higgler. I do not think it would answer for the small farmer or cottager to breed fowls for his own use.

Mr. Wilson: Would not a Goose or a Duck fatten for itself until it was time to fatten it?

Mr. Manning: I do not know about that; but the farmer would not like to see the cottagers' Geese wandering over his fields.

Mr. Chester: Do you think it better to adhere to a pure breed, a specific sort, or to let all sorts run together, and trust to nature to produce the best result?

Mr. Manning: On a light soil I should prefer a pure Dorking, taking care not to inbreed; if it were not a light soil I would have a cross between the Brahma Pootra and the Dorking; in all cases I would have the Dorking, either pure or crossed. If you require only eggs, you may dispense with the cock bird altogether; for breeding you should not have more than eight hens to a cock, and if breeding for exhibition or fancy purposes the number should be still further reduced. I don't think the eggs are quite so palatable where the hens run alone. I think it would be well if in poultry exhibitions there were some class for farmyard poultry, and if, as has been done at Crystal Palace, dead poultry were included. The Hamburghs, Spanish, and French varieties produce most eggs, but they never sit. I believe the most delicate flavoured bird of any for the table is the Dorking. I can quite imagine that there may be an impression in France that the Houdan is superior, but I should not like that to a national feeling. The Houdan produces very early chicks; but the earliest are the Cochins; they are very hardy and can be reared even in the snow. I cannot say exactly why cheap poultry are always bad, but a fowl that has been fattened will keep longer than one that has not. I have not experimentally on artificial hatching, and speak only from observation and information on that question. The difficulty is in rearing the chickens. I believe Mr. Schrodler, at Rickmansworth, is trying it on a large scale. Colonel Stuart Wortley has invented a new incubator. The great difficulty is in rearing chickens from them fit for the market. This is the opinion of the salesmen.

PACKING EGGS.

A number of numerous modes of packing eggs are advocated from time to time in your Journal, I have felt reluctant to state my individual opinion; but as "CONSTANT READER" in the number of the 4th inst. has been the first to advocate sawdust, it may be useful to add my practice to his experience. They perfectly coincide.

During the last three years I have had about 600 dozen of eggs forwarded to places far and near, each egg rolled in paper, and packed on end in sawdust; a layer of soft hay lining the top, bottom, and sides of the basket, which is tightly fastened with pliable wire. Their exemption from breakage when packed in this way is marvellous, and I cannot learn that their firmness is in the least impaired by it. Moss and cotton are difficult to manage, and expensive; rolls of hay are clumsy; and, as your correspondent avers, sawdust is cheap, cleanly, and comestible.—J. C. COOPER.

ANTICIPATIONS OF PIGEON FANCIERS— ANTWERPS—DRAGOONS.

I have been an enthusiastic breeder of Pigeons for the last seventeen years, principally abroad, and I am happily now acquainted with many enthusiasts in this country, who justly value your Journal quite as much as I do. Since the Pouter controversy began, I and those I allude to anticipated great revolutions and important reforms in regard to our shows, which should be the principal point of all interested; and I beg here to ask, What has become of the amalgamation of the two great metropolitan Societies? I, and many more, bailed with the greatest pleasure the union, and expected most anxiously every week to receive "our Journal," and satisfy our expectations.

I consider the first and most important point to us all, is the selection of judges for our shows. I suggest, therefore, that the great metropolitan Society will take the initiative, and I am positive that every society in England, and one of the first of which I have the honour to be a member, will be ready to co-operate in memorialising the committees of the principal shows to discontinue selecting judges from dealers. That done (and it will be our fault if left undone), the greatest evil has passed.

Then, I suggest, with all due respect to the metropolitan impartial judges, that local judges should also be selected, and I believe there are, or must be, many in this country, so that breeders will have the opportunity of knowing the opinion of several, and not only the few privileged principal metropolitan gentlemen; and my reason for suggesting this is, the oft-heard conversation between us, "So-and-so will judge, we must show such and such a colour, such a style, eye, &c."

Then, again, "They (expecting the same gentlemen), have given the first prize to such a colour in such a class last year.

but to another colour this year. They will give the turn next to the one which had the prize two years ago."

However singular these remarks between fanciers may be to those unacquainted with such controversies, they are based on the experience of years. On a certain class one of the Judges was heard to say, "We have given that variety plenty of prizes, we must give the chance to others for encouragement." Another great Judge has it as his motto, that a pair of birds to obtain a prize, "must be as nearly alike as two pins;" and I often wonder if he is aware that the exhibitors finding this to be his principle of judging, have invariably presented for his judgment, in a certain class, two cock birds, and I know those who obtained the prize in this way repeatedly, for it is impossible in certain classes to match the birds so exactly in colour as to appear "as nearly alike as two pins." Now, is this judging? What matters it how many prizes a variety has had, as long as it is worthy of the honour? If a judge who had not judged the same show in the year previous was to officiate, that consideration will disappear, and things will be more fair to all.

I shall be most happy to contribute my experience on the different varieties which I have kept, my mode of keeping them, and my treatment of some of their diseases which I have most effectually cured.

Just as I wrote the last sentence, I received "our Journal," and I perceive, in "Notes on Fancy Pigeons," by "WILTSHIRE RECTOR," some most astounding revelations in respect to Dragons and Antwerps. According to "WILTSHIRE RECTOR'S" views all fanciers possessing Blue Carriers, must in future call them Dragons, however "heavy" they may be, and all who possess Yellow Dragons must in future call them Horsemen. I know a great Dragon breeder who considers a good pair of Yellows above all other colours, and this we are sufficiently convinced is the view of the principal Judges, as when there is a good pair of Yellows they are always the first.

And now a word about Antwerps—the racehorses of Belgium. I have promised "our Journal" to a friend in Brussels, who visited me last week, and I wonder what he will exclaim when he reads that his seven-hundred-miles flying birds, which won for him four prizes last year in the national race, and hopes to be successful again this year in the great race from near Bordeaux to Brussels, "not being birds of colour, or points, are useless!" Our foreign friends have proved to us repeatedly, that there is not a Dragon or Horseman in England which can compete with the Smerl, which when bred for exhibition is capable of bearing comparison in every respect, and will be found even superior to either, simply because it beats them both in the only property they were intended for, as I consider, in colour. We see Blue Antwerps quite as good as the best Blue Dragons; but there cannot be any of the latter in colour as fine as a good Dun Antwerp, grey-headed, purple-necked and breasted, and well barred, or a good Blue Chequered, or Red Chequered, with the carriage of a Dragon, and a head as intelligent and symmetrical as a Barb's, and capable of performing a longer journey till old age puts a stop to this great property.

I believe "WILTSHIRE RECTOR" makes a mistake in supposing the Pigeon of the Dragon tribe, which was reported to have won the match, to be a Dragon of his recommendation, I am almost certain it must have been an Antwerp (if it was anything like a match), as we all know that Antwerps are considered of the Dragon tribe, but much more distinct, as whatever colour they may be, though we have four recognised colours, you cannot call them anything else, while many authorities on Pigeons allude to the Dragon as an inferior Carrier.

I trust "WILTSHIRE RECTOR'S" remarks will not in the least discourage any Antwerp fancier, for they can well afford in answer to say, We rather breed Antwerps which are not liable to be lost easily, most likely to return home two or three years after they have been disposed of, looking rather venerable, and almost unknown, and ready to breed, and rear two, three, and even four young ones of other delicate varieties—in fact, to do what no other variety can do in this respect, than to try to breed his grand Carriers, Dragons, or Horsemen, the first of which has become disfigured, as a good Carrier was not, in my opinion, intended to be a bird which when three years old is not able to pick up the grain he is to sustain life with, unless it is supplied in a trough; or the second, which is liable to changing his name by his colour.—A FOREIGNER.

HAVING kept Pigeons about twelve years, and still with increasing pleasure have them about me, I always feel deeply

interested in the perusal of the various opinions of the writers in your Journal, and I was particularly so in those in the number for June 4th.

Labouring under the disadvantage of very indifferent accommodation for giving my birds their liberty to fly, I have given up many varieties which I most admire, and have kept principally to Antwerps, only having besides one pair of Dragons; and having given much time and attention to their requirements and improvement, I have acquired a liking for the former, which brooks not the sweeping condemnation that "for exhibition they, as not being birds of colour or points, are useless."

First, there are four distinct colours approved by our most eminent judges, and to which prizes have been awarded, colour too often having taken the precedence of points, which this breed certainly possesses rather to excess than otherwise, as proved by the fact that scarcely two judges agree as to what character of bird should take the first rank. Having been guided by their decisions, I find myself in possession of several distinct varieties, with any of which I should not feel afraid of entering the lists of competition with other Antwerp fanciers, as they each carry points, though of slight variation in the whole sufficient to recommend them to notice, if not to admiration.

Now, the question naturally arises, How is it that more than one variety should be maintained by a breeder for competition in one class? Simply because there is wanting a "Standard of Merit," and as such can only be effectually agreed upon by judges and extensive breeders, there should be no time lost in carrying into practice to the fullest extent the suggestion of Mr. Fulton in respect to the selection of judges. Hitherto in this respect Antwerps have been sadly neglected, the consequence being that this large class has been made up of birds varying from those finely-developed specimens, many of which appear annually at Birmingham and other Shows, and some little better than Blue Rocks.

I believe the travelling properties of both Antwerps and Dragons are, or may be good, but the best strain of "racers" I know are Antwerps, and they are also handsome birds. Distance from home about 130 miles.

That one pair of birds will produce young of different colours is a fact often verified, but is not confined to Antwerps, as I need not remind most breeders of fancy Pigeons, presuming that all have experienced the truth that the gems for exhibition for colour, as well as other points, are the exception, not the rule.

Will Mr. Fulton kindly name those he would like to see as judges at coming shows?—J. I. B.

HIVING BEES.

WHEN bees are allowed to swarm naturally, everything should be in readiness before the swarming season arrives, so that when swarms come off there may be no confusion or difficulty in hiving. Hives should be kept cool, and if old they should be well cleaned. If a swarm is seen issuing from a hive, do not get in a "flurry," but keep cool. Do not be so foolish as to blow horns, ring bells, and scare your bees to the woods; but stand quietly and watch their movements, and nineteen times out of twenty they will cluster all right. As soon as they have settled prepare to hive them, an operation which may be successfully done, and without the least difficulty, as follows:—

First, bring a dish of cold water, and with the hand or a whisk of grass sprinkle the cluster well. This will make them perfectly quiet and easy to handle. Bring out a table, or, if that is not convenient, spread a cloth or boards upon the ground; and if they are to be hived into a common box or straw hive, set it upon the table or place prepared for it, raise up one side an inch or more, and put under a stone or chip to hold it. Then shake your bees into a pan, ba-ket, pail, or any dish that will hold them, and turn them down near the hive, and they will at once commence to enter. If it is desirable to have them enter faster than they are naturally inclined to do, take a wing and gently wing them in. As soon as all or nearly all are in, the hive should be carried to its stand, and well shaded if the sun is shining. New hives or newly painted hives should be shaded for several days, as bees cannot stay in an overheated hive. If the bees cluster upon a limb, from which it would be difficult to shake them, the limb may be cut off with a saw and laid near the hive; the bees will soon leave and enter. Sometimes bees will cluster upon the body of a

tree, when it is more difficult to get them off without irritating them. They should be well sprinkled, and very carefully brushed off with a wing or quill feather into a dish, and carried to the hive as before stated. An inexperienced person or novice should in this case wear a bee-protector. It will give them courage, and they will move more carefully.

This plan of hiving will be found much better than the old method of shaking the bees into a hive and then turning it over upon a table or board. I have known the queen to be killed by turning over the hive, and more or less bees are always killed in the operation. If moveable comb hives are used, they should be so constructed that the bottom board may be dropped at the rear of the hive for the purpose of putting in the bees when hiving. Swarms should never be allowed to stand where they are hived until evening, as is the practice with some, but should be moved at once to their stands, as some of the bees will go into the field to work in ten minutes after they are hived; and if left until evening large numbers will have commenced to work, and having marked the spot will return there the next day, and not finding the hive will wander about, and many will be lost. Second swarms are generally far more irritable than first or top swarms, hence these are far more likely to sting; but cold water will soon quiet them, and they may then be hived with safety.—(*American Paper*.)

SILKWORM-REARING IN ENGLAND.—No. 12.

The Mount and the Crop.—On the first appearance of maturity among silkworms, the "mount" has to be provided for. Silkworms are termed "on the mount" when full-grown, and seen crawling to the materials among which they are to spin.

Towards the period when the worms mount, the most forward should have been removed to the top stage but one, and so in succession lower down for the later ones. This might be done at the previous change, or clearing-off of the refuse, &c. The insects must not be handled roughly at any time, especially when large, and near spinning. Care must be taken when placing them in their spinning quarters not to let any fall to the ground, or they might burst, letting out the silk-forming fluid.

Whichever of the systems I have before described be adopted, the upper stages next the ceiling are to be first prepared, and the others in succession, by placing the spinning materials in rows across them, at 18 inches apart, so as to give easy admission to the trays, when placing the worms between.

In using brooms according to ancient custom, their tops should be sufficiently long and elastic to bend beneath the ceiling or stage, forming an arch, their bottom part standing on the cross pieces of the compartment of the stage below, and not on the paper on which the worms are, for that should be left at liberty, so as to be removed with all excrements, &c., after the mounting. None of the brooms must in the least extend or lean outside the stages, otherwise many worms might fall to the ground. Their branches should spread out in fan fashion, as well to allow of the free circulation of the air as to afford room for the insects to labour.

Having placed the brooms in position many ripe worms will easily find their way into them, but any not doing so may be gently placed near them, and this is a necessary attention during the entire mount.

Several Italian authors recommend laying light, dry branches or twigs of oak, elm, &c., over the worms for these to crawl on, then to bring the branches near the feet of the brooms. During the mount give the worms between the rows frequent light meals, in order to hasten their spinning. As soon as the greater part of them have mounted, clear away the refuse, without disturbing the spinning materials, placing the remaining insects in a smaller space, otherwise too many leaves will be wasted in feeding them.

I would impress on the rearer the necessity of constant ventilation during the mount, and the expediency of using fire heat if the temperature falls too much below 70°; for the worms, if subjected to much cold, cannot eject the silken thread in consequence of the silky matter being hardened.

As I have previously described the various ways of arranging the spinning materials, it is unnecessary to say more now, but I particularly like using laths for placing the brooms on. The bridge system, and that in which the materials are already partly arranged, are good, and so, doubtless, is that of Count Delprino. Whichever of the first methods be adopted, it is desirable at each end of the stages to form a kind of fence 3 or 4 inches wide, by simply laying materials up to the stage

above, and so securing it firmly from falling. All the most forward worms should be mounted in one of the castles, and those that are two or three days later consigned to the other. None, in fact, should be allowed to mount in the same castle after the fourth day. Any so much behindhand will be better removed to a temporary stage apart from the others, perhaps at the side of the room, and rather nearer the stove, there to be supplied with food and spinning materials, the latter placed in rows about 18 inches apart, and covered at top with paper, under which the worms will work. It is customary with the best Italian rearers to transport these backward worms, called "pigri," or lazy, to another ventilated room, where they are treated to a temperature of 75°, or even 80°, placing them between the rows of materials ready prepared on the requisite number of stages. The most suitable material to use in this case would be a mixture of shavings, dried spear grass, and pea haulm, in which the worms work readily.

With all the care exercised in placing the spinning materials on the stages so as not to extend beyond the sides, it often happens that some worms do fall to the ground, and to prevent their destruction by breaking the fall, it is proper to place straw, shavings, &c., on the floor round the sides of the castles, and there cocoons will be produced which otherwise would be lost. Some rearers make the middle and bottom stages of the castle 2 inches wider than the rest in order to catch the falling worms, and this is not a bad precaution.—LEONARD HARMAN, JUN.

OUR LETTER BOX.

DUCK LAYING IRREGULARLY (*Duck*).—Ducks, like fowls, form the egg, but they wait help for the shell. Fowls seek for pieces of chalk, failing which, they pick mortar from between bricks. The skin of oaks contains much lime or chalk, and is therefore good to give. In a state of inflammation the eggs are often obstructed. The application of the oiled feather was proper and successful. It should have been repeated. The egg would then have been laid in due course, although the shell was weak, unless it were broken. A broken egg in the passage is certain death. Have your Ducks access to water? if not, make them a puddle; put in gravel and a few oats. They will then get right.

HENS FOR LAYING ONLY (*Quite a Beginner*).—Hens will lay quite as many eggs without a cock as with him. Some say they lay more; we are not able to dispute or affirm that. Cocks are needed only to render eggs fertile, and have nothing to do with the production of them.

ERRATA.—In seventeenth line from bottom of first column, page 429, "fine match cocks" is printed "fine March cocks." Also, in the article in the Number of May 21st, second column, twentieth line from top, page 382, "strains of the same colour" is rendered "strains of the Game colour."

BOOK (C. T.).—Taylor's "Bee-keeper's Manual." Get also "Bee-keeping for the Many," price 1d., and "The Gardener's Almanack" for 1868, price 1s. Either or both of these may be had free by post direct from this office at the cost of an extra stamp for each.

DRIVING BEES (*Sussex Bee-keeper*).—We cannot tell why you failed to drive your bees, but should advise you to "try again," as we have known a novice succeed under precisely similar circumstances. When bees return to their hive after having swarmed, it is generally found that their queen is missing; but we know of no reason why this accident should be more common in the present than during former years.

TREATMENT OF WEAK STOCK (*A Lover of Bees*).—We do not see that you can do more for your bees than you have done. The stock will probably raise another queen, and may next season be a strong one; but the rapid increase of buildings around you is by no means conducive to successful bee-keeping.

FEEDING CONFINED BEES (*M. J. Lockerbie*).—When you directed bees to be confined "for two or three days," stating afterwards that they "should be liberally fed during the period of incarceration," there can be no doubt that, whether intentionally or unintentionally, you did in point of fact recommend the liberal feeding of confined bees. Not being now in our novitiate there was of course no risk of our being misled into following your instructions, and we related our early experience in order to put others on their guard. If you intended to convey any other meaning than that which your words implied, you should certainly have been more explicit.

PIGEONS SITTING FOR WEEKS (*Poster fauvier*).—We fancy the hens you mention are very old ones. We meet with nothing of the sort among ours.

PIGEONS (*Fred. Ken*).—You were treated ill by the party who returned the hen after having kept her long enough to have eggs from her; but you received her back, and have no remedy.

YOUNG DOVES DYING (*Fontaine*).—If young Doves or Pigeons are found dead in the nests with their crops full, they have died from cold; if with their crops empty, from starvation. Feed your old birds on wheat and canary seed. Tares though excellent for Pigeons are fatal to Doves. Avoid hempseed, except a very little in cold weather. Perhaps you have given this to your birds too freely.

CANARIES (*W. D. S.*).—Mr. Blackston's address has been published in this Journal. It is 22, Norfolk Street, Sunderland. You can have Brent's "Canary, &c.," from our office, free by post, if you enclose twenty postage stamps with your direction.

TEACHING A GOLDFINCH TO SING (*A Subscriber*).—We never heard of a Goldfinch being taught to whistle a tune. We imagine it is a bird that could not be taught to do so. In Germany Bullfinches are taught by constantly playing a small bird organ to them.

DEATH OF CANARY (*A Young Soldier*).—We could not detect the cause of death; decomposition is rapid in this weather. There is nothing amiss with the seed and sand you enclosed. Birds are benefited by green food daily. Brent's "Canary and other Cage Birds" can be forwarded to you free by post if you enclose twenty postage stamps with your address.

REWARD (*J. Wright*).—Your proposed advertisement is a libel.

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 25—JULY 1, 1868.	Average Temperature near London.			Rain in last 41 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun	Day of Year
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
25	TH	Meeting of Zoological Society.	72.9	49.6	61.2	Days.	47	at 3	18	at 8	52	at 9	31	at 11	5	2 23	177
26	F	Meeting of Quekett Microscopical Club.	74.1	49.6	61.9	20	47	3	18	8	7	11	59	11	6	2 35	178
27	S	Royal Horticultural Society, Promenade.	72.3	48.2	60.3	15	47	3	18	8					7	2 48	179
28	SUN	3 SUNDAY AFTER TRINITY.	73.7	49.5	61.6	16	48	3	18	8	35	1	24	0	8	3 0	180
29	M		72.8	48.8	60.8	12	48	3	17	8	45	2	49	0	9	3 13	181
30	TU	Royal Horticultural Society's and	72.8	48.2	60.5	14	49	3	17	8	54	3	16	1	10	3 21	182
1	W	[National Rose Show.]	74.7	51.0	62.8	11	50	3	17	8	0	5	46	1	11	3 35	183

From observations taken near London during the last forty-one years, the average day temperature of the week is 73.3°; and its night temperature 49.3°. The greatest heat was 93°, on the 27th, 1846; and the lowest cold 34°, on the 26th, 1862; 28th, 1861; and 30th, 1873. The greatest fall of rain was 1.18 inch.

BUDDING AND GRAFTING PELARGONIUMS.



NOTICING in page 412 a reply to a correspondent on the subject of Pelargonium grafting, and that the opinion is expressed that you "do not think budding would be successful," I am induced to send you a few particulars of some experiments which I have recently been carrying on in that way.

Having last autumn a number of strong-growing seedling Zonal Pelargoniums, which, on flowering, proved to be of no value in themselves, the idea occurred to me of trying the effect of budding and grafting Pelargoniums of different sections upon them, and I at once selected a few of those having the straightest and strongest stems as stocks for working upon, principally with the object of making standards. The following are some of the results:—

In the second week in November I inserted in one of the stocks above referred to, two grafts of a variety of Fancy Pelargonium named Profusion, and in another stock four buds of the same variety. One of the grafts took, and has since grown well and flowered freely. Of the four buds inserted in the other stock, one went off; the others remained inactive until the commencement of this year, when two of them commenced growing, slowly at first, but have since become gradually more vigorous, and are now forming a nice head to the stock; the fourth bud also started to grow a short time ago, after being inactive for more than four months, and although it has not taken so well as the other two, it is gradually gaining strength. Another bud, inserted in the same stock on the 18th of February to replace that which went off, is just now starting into growth.

I may here state that the stock upon which these buds are worked is a very strong one, with a clear stem 2½ inches in circumference, and 2 feet high to where it first branches out, and it was in four separate branches that the buds were inserted, one in each. The buds have not yet flowered, but (and here let me state that this was one of the main objects I had in view when putting in the buds), the leaves are, up to the present time, very perceptibly altered in their character from the original by the influence of the stock: whilst in the case of the grafted plant the stock does not appear to have had any influence in altering either leaf or flower. Whether the stock will have any influence in changing the character of the flowers on the budded plant remains to be seen, but I think it will not.

The next most successful result I have had is with the Ivy-leaf section of Pelargonium budded on the before-mentioned seedling Zonal stocks. On January 15th this year I inserted a bud of the old White Ivy-leaf in a stock at a height of 2 feet from the pot; this is now growing very rapidly, is forming a fine head, and has been several times stopped. It has flowered, but the stock in this case does not appear to have had any other influence in altering the character of the budded variety than giving it more vigour. I have also two stocks budded with *Peltatum*

elegans (Ivy-leaf), at 2 feet high, the one budded in February and the other in March. The former, which has two buds upon it, has flowered, and is growing rapidly, and making a fine head. The latter has four buds upon it, all of which have started to grow.

On another stock, also budded with *Peltatum elegans* at 4 feet high with two buds, both buds are growing. Another stock I also budded in March, at 4 feet high, with the new variegated Ivy-leaf *L'Elegante*, one bud on which out of two put in was just starting to grow, when, through an accident, the top of the stock was broken off about 8 inches below the place where the bud was inserted, and, to show how well the bud in this instance had taken to the stock, the broken top was put in as a cutting, and is now rooted, and the bud starting into fresh growth. In the early part of April I inserted two buds of the Fancy Pelargonium *Cloth of Silver*, using for the stock in this instance the scarlet Pelargonium *Donald Beaton*, with a clear stem 2 feet high, both buds are just starting into growth, and appear to have taken well.

On another stock, a Zonal seedling, I put in on February 22nd the following varieties, commencing at about 8 inches from the base of the stock, and inserting a bud just above the base of every leaf up the main stem. The first bud from the bottom was **Bijou*, then came *Madame Vaucher*, **Waltham Seedling*, *Pink Stella*, **Violet Hill*, **Brilliant*, **Madame Vaucher*, **Mrs. Pollock*, *Christine*, **Bijou*, and *Luna*. These marked with an asterisk are all growing, and I believe every bud would have taken had the stock been in better condition when the buds were put in, but at the time the bark did not run well.

Another Zonal seedling stock I have budded with a large-flowered Pelargonium, which is growing, and just coming into flower. I have one or two other cases not worth describing; besides, the above facts will be sufficient to show that budding Pelargoniums may be carried on successfully, and certainly in my case it has been to me a most interesting experiment. I am not aware if the same thing has been tried before—that is, with regard to budding one section upon another. Of course the grafting of Zonal Pelargoniums one variety on the other is an old affair, but I do not remember to have ever seen any account of budding having been tried, but possibly it has.

With respect to the Ivy-leaf section, I believe the fact that it can be successfully budded upon the common Zonal varieties will prove useful, as plants worked as standards, say from 2 to 6 feet high, would form fine objects for conservatory decoration, and particularly when they can be so quickly and easily obtained of the desired height, which they can be by sowing seed of any strong growing Zonal variety, and letting the seedling plants run up to the required height for working upon. What a fine object a plant would be if worked, say at 5 or 6 feet high, on a good stout stock with some of the new variegated Ivy-leaf varieties, and allowed to hang naturally down after being properly stopped a few times to form a good head.—*J. H. Mason, Prince's Park, Liverpool.*

P.S.—I may state that the method of inserting the buds is just the same as in budding a Rose, and that the bud is

simply tied round with a bit of soft mat. I may add that I have had a number of huds that have not taken; but on the whole the experiment has been successful. I find the Ivy-leaf varieties take, perhaps, better than any.—J. H. M.

SEDUMS AS EDGING PLANTS.

THE increasing demand for hardy plants capable of taking the places of tender ones in the flower beds has been the means of bringing into notice more than one of the favourites of bygone years as well as fresh subjects not hitherto employed in the flower garden. The plants up to this time most sought after have been those of a dwarf compact habit of growth, and producing a long continuance of flowers, or remarkable for their foliage. The Saxifrages, Violas, Gentians, and other genera have furnished recruits to the army of edging plants. Not a few likewise have contributed materially in producing the equally important spring display. There are, however, some low-growing plants of whose existence many may not be fully aware, and as their easy culture places it within the means of everyone to grow them, they cannot be too well known. Those which I shall mention are all dwarf, quite hardy, and interesting to the lover of plants as well as to the botanist; and I am not sure but that those who delight in high flaring colours will find a relief in contemplating the sober yet far from dull hue of the plants about to be described, and which are not by any means new.

SEDUM CALIFORNICUM.—This fleshy-leaved Houseleek differs from the kind so often met with on the tops of low buildings and other places where it is grown for its supposed medicinal properties, as the Californian Sedum is of more sturdy habit, and the leaves are all deeply tipped with purplish brown. The plant seems to thrive well in most situations, but likes a dry and sunny one, increases freely, and bears transplanting at any season. It forms an admirable edging to a small bed, and for places where a permanent edging is required it is extremely suitable. Occasionally it flowers, but not frequently, and when it does the sturdy stem bearing a head or corymb of flowers is not without beauty. It is less disposed to flower than either of the following two species. In habit of growth it much resembles the common Houseleek, the thickly-clustered heads pushing each other out of place, and by degrees rising into a sort of mound. As already stated, it is not particular as to soil, but likes the sun.

SEDUM GLAUCUM.—Differing widely from the preceding, this low-growing spreading plant quickly occupies its allotted space, and unlike many others may easily be kept to that line. It is of a pale whitish green colour, and looks well all the year round. About the middle or end of May it flowers abundantly, the bloom being of a greyish tint, not by any means unsightly, but rather the reverse when viewed from a distance. The plant prefers a dry situation and grows very fast, so that when once it has established itself it quickly covers the given space, and it does not seem to die off when it becomes old. Although I have had it in use for several years, I have never known the centre or old portion of the plant die off or grow into an unsightly lump; on the contrary, it would preserve its original height of about 2 inches, and the flower does not rise more than 2 inches higher. The plant appears to accommodate itself even to the most prominent point of rockwork where there is only a very small quantity of soil. I have used it occasionally in winter gardening, and the grey hue of the plant was seen to advantage when the soil was dark-coloured with moisture. For a permanent edging it is all that can be desired in habit.

SEMPERVIVUM GLOBIFERUM.—In habit this is more like Sedum californicum but is less robust, and the whole plant is of a deep emerald green, the opening foliage looking like a partially-opened Rose bud. In most respects it resembles Sedum californicum, excepting that it flowers more freely, and the individual flower stems are remarkably sturdy for so small a plant. I believe it is less plentiful than either of the first-mentioned two, but I have had it for several years, and the hardest winter does not take any effect upon it. Like the other members of its family it delights in sunshine and a dry situation, yet with me it is grown in many instances as a permanent edging around small circular beds containing a young specimen Pinus or other tree, and for such a purpose it, as well as the other two Sedums, is admirably adapted. It may be admired every day in the year, which is not the case with many ornamental objects.

I hope to continue this subject on another occasion, as there

are other deserving plants not sufficiently known to the general public, but those named I have had for several years, and can highly recommend where economy and a prolonged good appearance are desired.—J. ROBSON.

NOTES ON GLADIOLUS.

A CORRESPONDENT in a contemporary, who hails from Dundee, and styles himself "DAVE DIBBLE," is very strong upon the subject of Gladiolus spawn; and in reference to a statement made in this Journal, that Gladiolus spawn blooms the first year of planting, expresses himself plainly to the effect that he does not believe it. He cannot get his Gladiolus spawn to bloom the first year. If he were in my garden now, I could show him some which will do so this year; only then, perhaps, he would say that the bulbs must be older than I said.

When Gladiolus bulbs are taken up there will be, according to the variety (some being much more productive than others), a number of bulblets, varying in size from that of a pin's head to a filbert. Now, I do not mean to say that every one of these will bloom the next year, but that if you can get them of the size of a pea or upwards without any trouble these will flower the next season. Some do as I have done when I had time for it—viz., plant them at once in pots, leaving them nearly dry during the winter months, and starting them into growth in the spring. Others keep them dry, and do not plant them until the spring, and if the outside skin be carefully taken off their growth will be considerably quickened. There is no mystery about it; and although "DAVE" does not believe it, I can assure him that in the south and in France it is constantly done, and surely the Scotch growers, who in all florists' flowers so excel, can give their testimony that this is the case.

The present season, trying as it is to all flowers, is especially so to the Gladiolus; and all growers of it would do well to mulch their beds or cover them with cocoa-nut fibre refuse, which is much neater, and give copious waterings. I fear that in all light soils it will be very difficult to keep Gladioli alive, and even in deep soils great care and attention will be required. I almost wish now that I had erected some kind of protection over some of my beds to keep off this broiling sun, but not having done so, must only keep the water-pot going. Happily I have a good supply of the precious element, and my soil is naturally close but not over stiff. As yet I see but little, if any, symptoms of the disease which proved so fatal to my collection last year; and as it developed itself long before this period, I am in great hopes that I shall escape, in some degree at any rate: but should this long drought continue what hope of a good bloom can we have? The flowers will no sooner show themselves than their beauty will be gone.

As far as I have been able to see, the new varieties are remarkably vigorous, Semiramis, La Fiancée, Norma, and Princess Alice having very strong grass, and looking as if they meant to do work. This, as in all florists' flowers, is a great point; for it is most trying to give money and expend time on them, and then after all to find that they will not repay one for either. This is the case in Roses. Such kinds as Madame Furtado, Souvenir de Comte Cavour, Joséphine Beauharnais, &c., are very beautiful, but so terribly miffy, that after a little while, under the same care that others have received, they go off; and so with sorts like Achille, Napoleon III., &c. It disfigures the bed to find them failing.

It seems strange and is much to be lamented, that no encouragement is given to the Gladiolus in or near the metropolis, save at the Crystal Palace. Surely now that it is becoming more popular, an effort might be made to make a Gladiolus exhibition at the end of August or beginning of September, and to invite growers from all parts to join it. If we could devise anything on the principle of the National Rose Show, and hold the exhibition at the same time as the Crystal Palace Autumn Show of Flowers, the Company would give every facility and act with their usual liberality. Many Gladiolus growers would hail it with much satisfaction. I can only say that if such a proposal meet with favour I shall be happy to receive any communications addressed to the office of THE JOURNAL OF HORTICULTURE. I would also willingly subscribe towards it, and do my best to exhibit as well. It is a matter worth thinking about, for there is no autumn flower more deserving of cultivation. Growers would perhaps meet; we might discuss disease, best method of growth, habit, merit of new varieties, &c.

I hope to see in a few days M. Souchet's collection, not in

flower but in the growing state, and shall then be able to say what I think of his method of growth, and to report how they look this season.—D., *Deal*.

FRUITING OF THE ROSE APPLE.

In the year 1853, when I had the care of the large conservatory at Chatsworth, under the late Sir Joseph Paxton, I fruited the *Jambosa vulgaris* (*Eugenia jumbos*). The trees then stood on the north-west quarter, and must have been planted from fifteen to twenty years. They were between 12 and 15 feet high, and about 12 feet through. Being in very robust health they did not produce much fruit. I believe the Rose Apple has now been in this country nearly one hundred years, and I have no doubt it had been fruited even before the above date.—T. JONES, *the Gardens, Ribston Hall, Wetherby*.

In regard to several communications in late numbers of THE JOURNAL OF HORTICULTURE concerning the fruiting of the Rose Apple, it has occurred to me that it will be interesting if all who may have fruited it would send an approximate statement of the time and place of its fruiting, and so the date when it first fruited may be set at rest.

I can myself state when and where it was fruited anterior to the dates already noted in these pages; but before I do so it may be well to rectify a slight error which has crept into the discussion concerning the award lately given to fine examples of this fruit by the Fruit Committee of the Royal Horticultural Society. The certificate was awarded to the fruit as being exhibited for the first time at the Committee's meetings in a properly ripened state; and so well developed was the fruit that it met with the Committee's approbation in the points stated in the report, and upon which that body is bound to adjudicate. The fact that the Rose Apple has been fruited before does not confirm anything concerning its flavour.

The Rose Apple was fruited in the plant stove at Dynevor Castle, South Wales, in 1850. The plant was grown in a large pot set upon a tan pit, had a fine clean bole, was about 5 feet in height, had a round head about 3 feet in diameter, and bore from six to eight fruit. The fruit was of a somewhat peculiar flavour, otherwise it does not occur to me now to have been very remarkable for excellence. I would not venture to say whether the examples were good of their sort or not; certainly they were not so good as those lately exhibited. The gardener at Dynevor at that time was my late lamented friend Mr. Henry Bundy.—WILLIAM EARLEY.

THE COMMON AND COLCHIAN LAURELS.

In reference to the hardness of the Colchian Laurel, I beg to say, for the information of your correspondent, Mr. Robson, that its capabilities of withstanding the severities of a hard winter have been well and sufficiently tested in this establishment many years ago, having passed through that ever-memorable winter, to horticulturists, of 1860-61.

As many thousands of this invaluable Laurel are grown in this nursery, I have had many opportunities, especially during the spring of 1867, of pointing out to visitors its merits as contrasted with the old common Laurel, large numbers of which were occupying an adjoining piece of land. Seen at a little distance, the latter had more the appearance of a "quarter" of young Beech, they were so brown, than Laurels, while our Colchian friend was as "green as a Leek."—J. MAYOR, *Walton Nurseries, Liverpool*.

In this neighbourhood nearly all the common Laurels were killed down to the ground by the severe frost of January, 1867, but as far as I had an opportunity of observing, the Colchian Laurel was quite uninjured.—F. L. S., *Blackheath*.

BUDDING MARSHAL NIEL ROSE ON GLOIRE DE DIJON.

THOSE of your readers who possess a strong plant of Gloire de Dijon, will be well repaid if they devote a part of it to Marshal Niel. Two years since I budded a shoot about half-standard high; last year by closely pinching all the shoots I formed a bushy head, which this year is a glorious cluster of blooms. The stock appears to have sufficient influence to colour the outer petals of a rosy buff, closely resembling the

Gloire de Dijon; the inner petals are the deepest yellow, and the flowers are wonderfully solid and well formed.—T. F. R., *Sawbridgeworth*.

BRITISH FLOWERING PLANTS.

It may not be generally known, that some of the Narcissus family grow wild in certain districts; for instance, near here, both on cultivated land, and in many places in the woods, where, in all probability, the soil has never been under cultivation. *Narcissus uniflorus* grows by the thousand. A neighbouring farmer last spring ploughed up a field which had been two years in grass, and after the harrows had been over the land one could very soon have picked up half a dozen bushels of the bulbs.

This *Narcissus* comes very early into flower, and its flowers are very sweet-scented; but some people consider them unpleasant when a handful is kept for a short time in a close room. Still, being such an early-flowering plant (it flowers in March), it will always be welcome. Many of the thimble-like cupped flowers are very delicately fringed round the mouth. The flower stems being strong, and the flower itself capable of being carried to a distance and afterwards remaining in good condition for days, many an unwelcome hand from the nearest towns ruthlessly pulls thousands of the flowers, no doubt for sale.—G. DAWSON, *Chilworth, Romsey*.

MY ORCHARD-HOUSE JOURNAL.

May 25.—The first Cherries ripe, the Guigne Très Précoce, a round black Cherry with a short stalk, the earliest of all, and very sweet.

May 30.—The Early Purple Guigne Cherry quite ripe. Stalks very long and slender; fruit large, of a deep purplish black, very beautiful, and most delicious. This sort is too delicate for open-air growth unless against a wall, and is very liable to gum. The Guigne Marbrée Précoce Cherry ripe. This is the sort sent from France to London early in the month; its colour marbled red, and its flesh hard and flavourless. When fully ripe its colour is dark purple, and its flesh melting and juicy.

June 3.—Cherries, a sort much like Early Purple Guigne, Noir Précoce de Strasse, Bigarreau Jaboulay, and Belle d'Orleans, ripe. The second is a rather small black Cherry, now dead ripe, and very sweet.

June 10.—Early Lyons Cherry (*Hâtive de Lyons*), ripe. A very large dark red fruit, of firm flesh and excellent flavour. Werder's Early Black, ripe.

June 14.—Cherries Bradford Prolific, Black Tartarian (with larger fruit than the Prolific), Napoléon Noir, with very small stones, Brant, Large Black Bigarreau, Black Hawk, Bohemian Black Bigarreau, and a host of other large black Cherries ripe; all remarkably rich and good, owing to the sunny weather.

June 18.—Montgamet Précoce Apricot ripe; rather small, juicy, and agreeable, the earliest of all. I saw this sort in the beginning of the month at Messrs. Webber's in Covent Garden. The fruit had just arrived from Bordeaux.

June 20.—Sardinian Apricot (*Abriéot de Sardaigne*), ripe. Under glass this is a delicious fruit; its flesh is white, juicy, and like a sweetmeat. Précoce d'Oulins Apricot commencing to ripen. This is a few days earlier than the Oulins Early Peach, but is not so rich.

June 22.—The Early Beatrice Peach commencing to colour. This is as yet the earliest Peach known.

The following are the registers of temperature for the week just past, in dense shade in the open air, and the same in the orchard house at 2 p.m. each day:—

	Open air.	Orchard house.
June 14	81	33°
" 15	75	87°
" 16	75	86°
" 17	84	36°
" 18	76°	88°
" 19	83	90°
" 20	83	89°

—T. R.

VARIETIES OF THE GENUS VIOLA.

I OBSERVED in page 423, some remarks by Mr. J. Wills on a new white *Viola*, *Viola cornuta alba*, which he anticipates will become an especial favourite for edgings, its foliage being neat, and its habit compact and procumbent. He also considers that it will form a fine associate to *Viola cornuta* and *lutea*.

Being like Mr. Wills an admirer of the Viola tribe, I last year began to hybridise, with the view of obtaining improved varieties. I crossed Viola cornuta with the Imperial Blue Pansy, but I am sorry to state that I could not get a seed to come up. I have also crossed Mr. Tyerman's Viola montana, but I cannot say what the result may be.

I liked the habit of Viola lutea well, but not the flowers; they were so unshapely and paltry-looking. To improve it I crossed a few flowers carefully with blues, and the best yellow compact-growing Pansies, and I am pleased to say I have in a great measure attained my object, for the seedlings which have already bloomed have flowers very superior in shape to the original plant. Already I have a variety of a deeper yellow than the original, a primrose-coloured one, and a third which I mean to call Viola lutea striata, in which the upper petals of the flowers are distinctly striped with blue. The flowers of all are much superior in shape to those of Viola lutea. I have many other seedlings to flower, and should any prove of value, I will send an account of them.—WILLIAM MELVILLE, Dalmeny Park.

NOTES ON THE ROYAL HORTICULTURAL SOCIETY'S PELARGONIUM SHOW.

Few, I think, could complain of the manner in which the prizes were awarded at the Special Prize and Pelargonium Show, held at South Kensington on the 16th and 17th inst. It was evident the Judges were alive to their duty. They very properly disqualified several fine collections, owing to these not being exhibited in accordance with the wording of the schedule. This is as it should be, and a few more examples like this will make exhibitors more careful, and the part to be performed by the judges will thus become much more simple and agreeable.

Many and various are the opinions as to who has the best Gold or Silver Tricolor Pelargonium, and so changeable are these varieties, that it is not often that one can be shown in really good condition many times in succession. It is only, therefore, when any particular variety happens to be in good condition just at the time the exhibition takes place, that its owner can hope to gain a prize with it.

In glancing over the numerous and beautiful collections exhibited the other day, few plants could be found amongst them having a decided and permanent character like Mrs. Pollock. The young leaves were bright and beautiful as butterflies, but their beauty only lasts a short time. No plant could be found with any of the fully-developed leaves retaining their beauty so long as Mrs. Pollock does; for this reason Mrs. Pollock will retain its position, the same as Flower of the Day has done, for many years. I consider, therefore, the Judges did quite right in bestowing their highest favour on Mrs. Grieve, for in my opinion it was decidedly the best variety exhibited on this occasion, and the only one likely to become a formidable rival to the beautiful Mrs. Pollock. It appears to have the same freedom of growth that Mrs. Pollock possesses; there is a good substance in the leaf, and, above all, a good foundation of green in the composition of the leaf. This will enable it to retain its beauty for a much longer period than many of the other varieties which appear for the time more beautiful and bright than Mrs. Grieve.

The next best Golden Zonal, in my opinion, is Sir R. Napier, exhibited by Messrs. Carter & Co. It is perfectly distinct from everything else exhibited on this occasion, and appears to possess a good constitution. It has a neat and compact style of growth; the leaves are flat, of good substance, with a splendid crimson zone waved with blackish velvety crimson. To the above may be added Masterpiece, Howarth Ashton, Prince of Wales, Mrs. Darnett, Ettie Beal, and Countess of Craven.

Amongst the Silver Tricolors, Miss Burdett Coutts stands first, in my estimation. Mrs. John Clutton is also good. To these may be added Lass o' Gowrie and Princess Beatrice.

Amongst the Bronze and Gold Zonals, Criterion must be considered a splendid variety, only suitable, however, for pot culture. The plant exhibited by Messrs. F. & A. Smith was a splendid mass of colour, and was deservedly awarded the first prize. Mrs. Simpson and Arab are also fine varieties.

Amongst the Golden self varieties, Golden Emperor, from Messrs. Saltmarsh, was decidedly the best.

First-class certificates were awarded to Mr. W. Paul and Messrs. E. G. Henderson on this occasion for the beautiful double-flowered Pelargonium Madame Lemoine, the best of all the double-flowered section. The habit is very dwarf and

compact, and, unlike most of the other double kinds, it is a very free-flowering variety. The flowers, which are very double, and of a pretty peach colour, are borne on stout footstalks well above its neat foliage, which is slightly zoned. This will, undoubtedly, become one of the most popular plants of the day.

Amongst the subjects for the awards of the Floral Committee, Mr. C. Noble exhibited Spiraea palmata, one of the handsomest hardy plants in cultivation. It has fine, dark green, palmate leaves, and above these are produced immense clusters of bright peach-coloured flowers, which are double. It is, certainly, a most graceful and useful plant, and if it will bear forcing in pots like the Hoteia japonica, will prove one of the most valuable decorative plants we possess. It was deservedly awarded a first-class certificate. I predict a brilliant future for this lovely plant.

Mr. Cole, of the Worthington Nursery, exhibited a beautiful seedling Fern, Lomaria gibba crispa. This handsome Fern was also awarded a first-class certificate.

Messrs. E. G. Henderson produced a grand display with their little square wooden boxes, in which were exhibited one hundred species and varieties of plants suitable for bedding purposes. This was, undoubtedly, the most interesting feature of the Show; it was not only interesting, but highly instructive to the flower gardener, for a very large number of plants were here brought before him, which would at once suggest their use in bedding arrangements. The way in which these were arranged reflected the highest credit on Messrs. Henderson and their skilful assistants. At some future time I shall give a list of flowering and other plants suitable for producing fine combinations with many of the little gems in this exhibition. It is to be hoped that Messrs. E. G. Henderson will still retain this pretty collection of plants in the boxes just as they were exhibited at the late Shows at Kensington and Regent's Park, so that many gardeners who may have been prevented from seeing them on the occasions referred to, may see them at the nursery, where they will find many other subjects that will prove quite as interesting, if not quite so instructive.—J. WILLS.

CRYSTAL PALACE ROSE SHOW.—JUNE 20TH.

As might have been expected, the Roses even thus early have shown unmistakable symptoms of the effect of the scorching, almost tropical weather, which we have had for some time. Never, probably, were so many Roses shown out of character as they were on this occasion, and more especially was this the case with the dark varieties, the colour being fairly driven out of them by the sun. Some kinds were really hardly distinguishable; notably was this the case with a box of John Hopper, which no one could have recognised as that fine variety. Charles Lefebvre in many boxes had a mottled appearance, also, to doubt, the effect of the sun; but although this was the case, and it may seem a strange anomaly, yet I may also add that I never saw finer blooms of some varieties, but then they had been evidently bloomed under shading. Thus, for example, in Mr. Hedge's and Mr. Pochin's boxes there were blooms which were, beyond doubt, as fine, as fresh, and clean as we have ever seen them. Some wonderful boxes of yellow Roses were exhibited; amongst others by Mr. Hedge and Mr. Cant, Marechal Niel, L'Enfant Trouvé, and Triomphe de Rennes, were exceedingly fine.

Leaving, however, other hands to deal with this portion of the Show, I would confine my observations to the new Roses, of which there was not a very plentiful supply, some of the boxes, too, being disqualified for not complying with the rules, which only admitted Roses sent out in 1866 and 1867. Mr. Keynes took the first prize, and Mr. Cant the second. Among the best Roses of 1866 were Felix Genero, François Treyve, Horace Vernet, Madame George Paul, colour somewhat flown, but a fine Rose in cool weather; Mademoiselle Annie Wood, a first-class Rose of bright colour; Monsieur Noman, a Rose I had too hastily condemned; it is very fine, in the way of Marguerite de St. Amand, and a box of it shown by Mr. Cant was most lovely. Thorin is bright, but has too little stuff in it; Boutin d'Or, Tea, is excellent, and Madame Margottin, very fine.

Of the Roses of 1867 but very few were exhibited. Madame Noman is a lovely Rose in the style of Mademoiselle Bonnaire, and Virginal, white with light flesh-coloured centre; Baronne Adolphe de Rothschild, a lovely light pink if it is full enough—as shown it was not; Prince Humbert, very bright, but its shape not what I should like; but I think the new Roses must be respite for another time, for it would be very unfair to judge of them this season, when Roses are so out of character. I think we may say, however, that Roses which show now well will be worth keeping.

It falls quite within the legitimate sphere of floral notices to draw attention to the very beautiful decoration of the Royal Box, showing that the tasteful decoration of rooms is not a *specialité* of our French neighbours, for it is entirely owing to the good taste and judgment of Mr. Wilkinson, the able and active manager of the flower shows, that

the central hall, if we may so call it, is a marvel of beauty. A fountain plays in the centre, surrounded by fine-foliaged and dowering plants of great beauty, while through an opening on one side is seen a water nymph, with a fountain casting down a sheet of water all round, lighted from above by gas, which brings out beautiful prismatic colours in the water. It is a most charming arrangement, and does infinite credit to the designer.—*D., Deal.*

NOTWITHSTANDING the recent scorching weather, the display of Roses at the Crystal Palace on Saturday last was excellent in quantity, and in quality vastly better than even the most sanguine could have expected. Of course many of the flowers had been "touched" by the sun, and had, consequently, lost that freshness which constitutes so great a charm in a Rose, and many were showing stamens; but then again there were whole stands, and these, too, from a distance, in which the blooms exhibited all the freshness and perfection which one could have desired in the most favourable weather. On the whole, notwithstanding all drawbacks, the Show was magnificent, and despite the heavy rain which fell during part of the day and other attractions elsewhere, more than 13,000 visitors inspected the Exhibition.

In Class 1, for single trusses of seventy-two varieties, Messrs. Paul and Son took the first place with remarkably fine blooms, conspicuous among which were Duke of Edinburgh, rich crimson scarlet; Marie Baumann, a splendid earmine Rose of fine form, hitherto not frequently exhibited, but good in almost every stand in which it was shown; Madame Charles Wood, glowing crimson; Alfred Colomb; Mademoiselle Marie Rady, another brilliant-coloured variety; Senateur Vaisse, Xavier Olibo, Devoniensis, Francois Travy, Marechal Niel, magnificent, as indeed it was in most of the stands; Louise Magnan, fine white; Madame Victor Verdier, Maurice Bernardin, Lord Macaulay, Mademoiselle Therese Levat, Olivier Delhomme, Mademoiselle Annie Wood, Prince Camille de Rohan, and Mademoiselle Bonnaire, small, but beautiful. Mr. Cant, of Colchester, who was second, had fine examples of Marechal Niel, Madame Bravy, Madame Victor Verdier, Duchesse de Caylus, Niphotos, President, Elizabeth Vignerot, Gloire de Vitry, Olivier Delhomme, Prince Camille de Rohan, Souvenir d'Elise, Devoniensis, Celine Forestier, Horace Vernet, Maurice Bernardin, Marie Baumann, and others. Mr. Mitchell, of Piltown Nurseries, Uckfield, who came third, had also excellent blooms, and some very fine, such as Charles Lefebvre, Mlle. Marie Rady, and Charles Verdier. Mr. Keynes, of Salisbury, was fourth.

Class 2, three trusses of forty-eight varieties, always affords a rich and effective display, and on this occasion was quite a feature of itself. Messrs. Paul & Son's stand, which took the first prize, contained many remarkably fine trusses, especially those of Madame Furtado, Victor Verdier, Ville de St. Denis, Duke of Edinburgh, Beauty of Waltham, Niphotos, Madame Rivers, Marechal Niel, Marie Baumann, Maurice Bernardin, Mlle. Marie Rady, Pierre Notting, Alfred Colomb, Duchesse de Caylus, and Gloire de Santenay. In the second-prize collection, from Mr. Keynes, were Madame Vidot, Marie Baumann, Camille Bernardin, Charles Lefebvre, Marguerite de St. Amand, Princess Mary of Cambridge, Souvenir de Malmaison, Gloire de Dijon, Madame Sertot, Alba Mutabilis, Mrs. Ward, Elae rose, Bernard Palissy, confused-looking; Xavier Olibo, fine; Alfred Colomb, Mlle. Marie Rady, Francois Lacharme, Triomphe de Rennes, Boule d'Or, Madame Knorr, and Madame Willermoz. Mr. Cant, who came third, had also very fine trusses of some of the varieties just named, as well as Rubens, white, tinged with rose; Fisher Holmes, John Hopper, Comtesse de Chabrilant, Exposition de Brie, splendid colour; La Brillante, Dr. Andry, and Devoniensis. Mr. Fraser, of Lea Bridge Road, Leyton, took the fourth prize with, among others, Prince de Poria, very fine in colour; Fisher Holmes, Duchesse de Caylus, Marie Baumann, John Hopper, Madame Boutin, Madame C. Wood, Monsieur Nonan, and Antoine Ducher. Mr. Mitchell also exhibited in this class, but the warm climate of Sussex, which gives him so great an advantage sometimes, was against him, as the sun had somewhat affected his otherwise fine blooms. Messrs. Francis contributed good examples of William Rollisson, Madame Vidot, and some others.

In Class 3, for three trusses of twenty-four varieties, Mr. Keynes took the lead with splendid examples of Marechal Niel, America, Triomphe de Rennes, Souvenir d'un Ami, Souvenir de Malmaison, Devoniensis, Marguerite de St. Amand, Alfred Colomb, Victor Verdier, Mlle. Marguerite Dombria, Charles Ronillard, Princess Mary of Cambridge, and Charles Lefebvre. Messrs. Paul & Son, who were second, had Pierre Notting, Maurice Bernardin, Prince de Poria, Alfred Colomb, and others, fine in size and colour; whilst Mr. Cant, who took the third place, had a splendid example of Marie Baumann, and several others, very good. Mr. Clarke, Streatham Place, Brixton, was fourth. Mr. Cattell, of Westerham, sent, among others, Beauty of Westerham, a lively-coloured variety of English origin.

The next Class, 4, was for single trusses of the same number of varieties. In this Mr. Keynes was again first, and had a magnificent bloom of Marechal Niel measuring about 1 1/2 inches in diameter, and fine examples of Marie Baumann, Hippolyte Flandrin, Marguerite de St. Amand, America, Souvenir de Malmaison, Souvenir d'Elise, Souvenir d'un Ami, Charles Ronillard, and Pierre Notting. Mr. Parker, Victoria Nursery, Rugby, who was second, had Marechal Niel, not large, but extremely rich in colour, and excellent examples of Madame Victor Verdier, Charles Lefebvre, Alfred Colomb, and

General Washington. The third and fourth prizes went respectively to Mr. Clarke, of Brixton, and Mr. Maun, of Brentwood.

In the amateurs' classes the exhibitors were very numerous, and many of the stands were excellent, especially those shown by Mr. Hedge, Mr. Ingle, the Rev. E. N. Pochin, and Mr. Postans, which contained some superb blooms, and withal wonderfully fresh. We can only notice a few of the best varieties in each class.

For single trusses of forty-eight kinds, Mr. Hedge, of Reed Hall, Colchester, took the first place with Boule d'Or, Exposition de Brie, not large, but fine in colour; Prince Camille de Rohan, Rubens, William Griffiths, Madame Margottin, Triomphe de Rennes, Marie Baumann, Pierre Notting, L'Enfant Trouve, and Marechal Niel, the last of the richest golden colour. Mr. Ingle, gardener to Mrs. Round, Birch Hall, Colchester, who was second, had John Hopper, Senateur Vaisse, Charles Lefebvre, Pierre Notting, very fine; Rushton Radclyffe, Duchesse de Caylus and Souvenir de Malmaison. Mr. Thorneycroft, Floore, Weedon, was third; Mr. Chard, gardener to Sir F. H. Bathurst, Bart., Salisbury, fourth.

In Class 6, for thirty-six single trusses, Mr. Hedge was again first with remarkably fine blooms, especially those of Marechal Niel, very deep in colour; Dr. Andry, Madame Boll, and Alfred Colomb. Mr. Draycott, gardener to R. Studd, Esq., was second with Victor Verdier, Due de Rohan, Louis XIV., Olivier Delhomme, and Madame Bravy; and good trusses of other varieties came from him; from Mr. Keen, gardener to J. G. Sheppard, Esq., Camsey Ash; and from Mr. Ingle.

In Class 7, twenty-four single trusses, the Rev. E. Pochin, Sibby Vicarage, Loughborough, had the first prize for beautiful examples, both as regards size and freshness, of Senateur Favre, Victor Verdier, Souvenir de Malmaison, Charles Lefebvre, Madame Furtado, Dr. Andry, Due de Rohan, magnificent, Comtesse de Chabrilant, Jules Margottin, Louis Peyronny, Marechal Niel, Climbing Devoniensis, John Hopper, Marguerite de St. Amand, and Madame C. Wood. There was not a bad Rose in the stand, and the greatest credit is due to its exhibitor, as likewise to Mr. Postans, who took the second prize, and whose blooms were also excellent. Mr. Stoddart, Wivenhoe Park, and Mr. Nichol, gardener to T. H. Power, Esq., Bury St. Edmunds, were third and fourth.

The next Class, 8, was for twelve varieties, and in it Mr. Pochin and Mr. Postans were again first and second, exhibiting beautiful examples of Madame Furtado, Charles Lefebvre, Climbing Devoniensis, Marechal Niel, General Pelissier, Francois Louvat, Xavier Olibo, Niphotos, Abel Grand, Pierre Notting, splendid, Marie Baumann, Madame Willermoz, Madame C. Wood, Due de Rohan, and Madame V. Verdier. Mr. May, Slitted, who was third, had among others Marechal Niel, very fine, and the fourth-prize stand of Mr. Ingle contained a very large and fine Charles Lefebvre.

Collections of Roses, any variety, were furnished by Messrs. Paul and Son, who exhibited numerous varieties, and Mr. Cant, who had a stand of magnificent trusses of Marechal Niel. To each of these exhibitors a first prize was awarded, the second and third being taken by Messrs. Francis, of Hertford, and Mr. Hollamby, of Tunbridge Wells. The latter also sent several boxes not for competition, and received an extra prize.

Of yellow Roses, Mr. Keynes sent numerous fine trusses of Louise de Savoie, Gloire de Dijon, Triomphe de Rennes, Boule d'Or, and Marechal Niel, the last splendid, and he received a first prize; the second going to Mr. Hedge, who had L'Enfant Trouve, very beautiful; Jaane de Smith, Celine Forestier, Narcisse, and some of those just named. Mr. Stoddart was third, and an extra prize was awarded to Mr. Bristow, gardener to Mrs. Orme, Broadwater.

For Tea-scented and Noisette varieties there were classes both for nurserymen and amateurs, Mr. Cant, Mr. Fraser, and Mr. Parker, of Rugby, being the prizetakers among the former; and Messrs. Hedge, Bristow, and Postans among the latter. In the various stands shown by these gentlemen, there were beautiful trusses of Niphotos, Madame Willermoz, Marechal Niel, Devoniensis, Comte de Paris, Moiret, Souvenir d'Elise, Vicomtesse de Cazes, L'Enfant Trouve, Madame Margottin, a fine new pet Rose; Gloire de Dijon, and Celine Forestier.

The best basket of one hundred flowers was one of Marie Baumann, from Messrs. Paul & Son; Mr. Fraser being second with Madame Victor Verdier interspersed with Asparagus, and Maiden-hair and other Ferns; and Mr. Chard, third.

Among miscellaneous subjects were collections of bedding plants from Messrs. E. G. Henderson; Downie, Laird, & Laing; F. & A. Smith; and Mr. Maun, of Brentwood. Mr. Guyett, gardener to J. Perrott, Esq., Herne Hill, sent finely-fruited Vines in pots; M. Van Houtte, Iresine Lindenii, with purplish chocolate leaves; and G. F. Wilson, Esq., Weybridge, fine cut spikes of various Lilies.

RHODODENDRONS AND THEIR CULTURE.

I was disappointed that in the article thus entitled, which appeared in page 409, no mention was made for out-door culture of what I know as Rhododendron caucasicum, which is dwarf, hardy, the first to flower, and has flowers streaked with rose while in the bud state, delicate sulphur-coloured when blown. Nor is mention made of the double, which is equally hardy, large, and handsome in stem and trusses.

These, with numerous fine varieties, thrive admirably here in the north-east of Scotland, at an elevation of 700 feet above the sea level.

Then, for pot culture, how can your contributor omit R. Edgworthii and Nuttallii, one so handsome a plant, the other redeeming the rough coarseness of its leaf, and rather crabbed growth, by the size, beauty, and delicious fragrance of its flowers?—H. C. J.

LICHENS ON FRUIT TREES.

THE espalier Apple and Pear trees here, both in their trunks and branches, I found on my arrival, two years ago last April, "as green as grass." I bought a mason's whitewashing brush, and having slaked some lime I made a thickish wash of it, added a little soot, and laid on the wash over the lichens in winter. The trees are perfectly clean, and I have seen no renewal of the lichens.

I have drained all three of my gardens 3 feet 6 inches deep. I believe lichens betoken a want of drainage, but also that they may be attributed to other causes. They harbour insect pests, and can no more be beneficial to a tree than scurf on the skin to an animal. The skin is the second lung, and performs the office of leaves till these are formed. Stoppage of the pores of the skin cannot be advantageous to health. Attention must be paid by arboriculturists to the skin and leaves of trees, and as much attention should be paid to the roots as to the branches. We want gardeners to be as "well up" in the roots as in the branches.—W. F. RADCLIFFE, *Okeford Fitzpaine*.

NAMING PLANTS IN PUBLIC GARDENS.

THE spirited and artistic manner in which the public gardens in the neighbourhood of the metropolis are managed, at once preclaims the desire of those who have their direction to provide the public with the means of pleasure and gratification of the purest and most healthy nature; and the thousands who escape the smoke and din of city life to avail themselves of spare moments to breathe the breath of flowers, return invigorated to their multifarious duties, their mind provided with a fresh train of thought, which must, perhaps imperceptibly, exert a beneficial influence over their nature. As regards the town population, the objects of public gardens are to a great extent answered. These visitors come to enjoy a feast of beauty, and their presence in turn gives energy and pleasure to the promoters. Thus the enjoyment is reciprocal.

There is another and an important class of visitors, who from the very extremity of the kingdom, and even beyond its limits, periodically visit public gardens near London, but with an object different from that of their city brethren. A mere feast of flowers is not the primary object of their visit, these they leave at home in abundance. Public gardens are by this class of visitors regarded as standards of excellence, and they are anxious to see how near their own approach this standard; or such gardens are looked upon as experimental gardens, where objects are examined with a critical eye, their adaptations and qualities duly noted, and conclusions arrived at as to the desirability of the plants for the home plots. These, in numbers of cases, are so limited as not to admit of unproved novelties. Every bed is under the eye, and must be planted in confidence to give a good return. Viewed from this stand-point public gardens are not only establishments of public interest, but are emphatically institutions of public usefulness; and as the directors are evidently desirous of contributing to the public good, they would greatly enhance the interest of these gardens if the plants employed were legibly and correctly named. This omission is a drawback common to most of them. At the Crystal Palace, Hyde Park, Royal Horticultural Gardens, Battersea Park, &c., the public cannot learn the names of the plants employed except by going to a considerable amount of trouble. If the men who happen to be working on the spot are appealed to for information, it is ten to one if they are able to give the names promptly and correctly, and as long as the authorities withhold from the public the means of acquiring the names in a proper and legitimate manner, so long will these men be troubled and hindered in their work by the queries of visitors, who from curiosity or more solid motives are naturally anxious to know what they are looking at and admiring. The omission is certainly inconvenient, and a remedy would, I am sure, be hailed with pleasure by thousands.

From a variety of considerations it might not be desirable to

have names appended to the plants all over the garden; but would it not be desirable to reserve a plot as a sort of garden of nomenclature, where a plant or two of every kind might have its name attached in a position accessible to all, and in such a manner that it would not be necessary to remove the label in order to read the name? This would be a feature in these establishments which would be attractive, interesting, and useful. This is the suggestion of a gentleman, a patron and lover of horticulture, who visits periodically the various public gardens for the purpose of acquiring information, and each time returns disappointed at his inability to acquire the names of many plants which he would be glad to know, and which he thinks ought to be provided. He reasonably only regards himself as the representative of many others similarly circumstanced, and thought the subject of sufficient importance to be mooted in the columns of THE JOURNAL OF HORTICULTURE.—J. W.

MAKING SKELETON BOUQUETS.

WHEN your leaves are dry enough to work handily, commence forming them into bouquets. Take the larger leaves and those with the longest stems and place them in a sort of semicircle on a sheet of plate paper; or, if you wish to form them into a sort of wreath, commence near the top of the sheet and work in a circle, bringing the sides of the wreath together at the bottom and fastening them in a knot of blue or straw-coloured ribbon. These colours look best with the snowy lacework of the leaves, though some might prefer green. If a wreath is formed, a small picture may be placed in the centre. A Rose, in bright colours, with a few buds, and a growth of vivid green leaves, would look beautifully if surrounded by the frosty network of the skeletonised leaves. The leaves, I should have said before, may be fastened to the paper by just touching the backs of them where they join the stem with a drop of colourless glue. They will overlap each other and hide all traces of their being glued. Of course, they should not be laid on flat, one over another, as such an arrangement would spoil the effect. They must be disposed as naturally as possible. Nature is always an excellent guide in these matters, and the more closely we imitate her the better we shall succeed in our experiments. Some of the leaves should be curled over the fingers and then fastened along the middle of the wreath, or in the central part of the foreground of the bouquet. They will lie up among the others, and their graceful curl will relieve the whole collection from any prim, stiff appearance, and make it look airy and light. If a bouquet is made, it should be rounded-up towards the middle in front like a bouquet of flowers. You will understand what I mean better, probably, if you imagine a bouquet cut in halves, and one-half laid on a sheet of paper before you. You will observe that it is rounded from the side. If a bouquet is made, leave several long stems of nearly an equal length below the leaves, and glue on a knot of narrow ribbon as though that held the cluster together.

A nice case for these wreaths or bouquets is made as follows:—Take four pieces of thin light board, and make a box about 6 inches deep. Colour the outside with some dark colour, and line the inside with smooth white paper. The box, of course, will be made to correspond to the size of the sheet on which you have made your wreath. The sheet should fit in nicely and smoothly, and it will, if you are careful and particular in making the box. I ought to have mentioned that a groove should be cut in the box to admit the glass in front.

Now, when you have your pictures fitted nicely in the box, or, perhaps, it should more properly be called a frame, if it looks unfinished (and very likely it will), you must go to work and make some sort of a flat frame, the inner edge to be of the same size as the deep or box frame, which can be fitted on over the latter with strong glue. Make it neatly, and give it a colouring of umber, nitric acid, or some such stain. Then exercise your taste in forming pretty figures on it with seeds of different plants. If you place a row along the outer and inner edges, it will look very pretty, and if Peas or Beans are used they will give it the appearance of being "beaded," as carpenters term it. Beans or Peas must be split before being used, and coloured after being put on.

Groups of Burs look extremely well; besides, they need no colouring. They are of fine shape, and when placed in clusters have a decided resemblance to some kinds of flowers. You can invent many ways to make your frame very ornamental,

and your own judgment and taste will guide you in the work, and create something that will not cast a disagreeable contrast on the beautiful, frost-like, airy ghosts of summer's leaves inside the case.—E. G. REXFORD.

THE LILY OF THE VALLEY.

EVERYONE fond of flowers admires this graceful and pleasing little harbinger of summer. Despite the rage for exotic plants, the Lily of the Valley remains a favourite, and many thousand spikes of its flowers are disposed of in Covent Garden Market; indeed, the flowers of no other British plant, probably, are in greater demand.

In several parts of the woods here, the Lily of the Valley grows very freely, and the places where it succeeds best seem to be little better than beds of very fine sand. Some of these spots are overshadowed by Oak trees, which afford protection from the sun during the heat of summer, and generally there grows amongst the plants such a close covering of *Pteris aquilina*, that it appears when in full leaf sufficient to choke, if not to entirely kill them. I have had this impression, but when visiting in the following May the places where the Lily of the Valley was growing, I found it again in full force. Its leaves soon die down when exposed to the heat of summer, and I have never seen it in a wild state so strong as it is when grown in shady places in gardens, especially when not disturbed for years.

It is generally very impatient of removal, and often some years will elapse before it acquires in a new position the same degree of strength which it exhibits when grown in good sound soil in a shady situation. I have often seen it doing well in beds at the back of a high wall; the north side answers best, as the plant does not seem to enjoy full exposure to the sun's rays. It might be asked, Why not at once imitate its native habitat during the summer months? I do not perceive the propriety of doing so, except to a limited extent near some fernery or rockery adjoining pleasure grounds.—G. DAWSON, *Chilworth, Romsey*.

VIOLA CORNUTA, AND ITS FAILURE IN DRY SEASONS.

Most of our ornamental plants are from climates which are warmer and more sunny than our own, and where the weather or locality is cold and sunless the result which they afford cannot be satisfactory; but we also cultivate a class of plants from moister climates, and where rain instead of sunshine prevails they flourish. Thus, whatever be the character of the weather in England, we can always enjoy something, and the most adverse season never passes away without its proving favourable to certain plants; and if that which is successful be only recently introduced, we are apt in our enthusiasm to give it a higher degree of importance than it deserves, and the reverse if the contrary should be the case. The more popular the plant, too, the greater the outcry when it fails.

Now I expect to hear complaints against a plant which has been highly lauded during the last two years, and especially if the summer should be dry and hot. *Viola cornuta* was in everyone's mouth as a plant of the first merit, and there was some controversy as to who had first introduced it as a bedding plant. Without giving any opinion on this point, I anticipate that after a dry summer it will be ejected from most places where water is scarce, and that it will be exclaimed against more than it ought to be. Without wishing to disparage this plant, I have always maintained that it is better suited to a moist season or situation than to a dry one, and as during the past two years there has been no lack of rain in the growing summer months, it has prospered much better than it may do in 1868. I anticipate its total failure this year in places where its planting-out was left until the usual bedding-out time arrived; for, like the *Cerastium*, it ought to be planted early in spring, or, which is better, in the autumn. Mine were all planted at that time, and were in full bloom when the bedding *Pelargoniums* and other plants were turned out; but even with the advantage of being established six months or more, dry weather begins to have an effect upon it, and I anticipate a short season for this plant, though during the previous two years it continued longer in bloom.

Now, we have no reason to find fault with this. No plant is so constituted as to prosper alike in all seasons, and we must regulate our planting by what we know of our soils, and by what we can guess of the coming season. On the average of

seasons it will be found that this plant will be in better condition when the rainfall is abundant than where scanty, and the north of England and Scotland would seem to be its home. Let us not discard it altogether, for although it will not endure for successive weeks the bright hot sunshine which makes the *Pelargonium* flourish, it has its time and place.—J. ROBINSON.

SCARLET FLOWERS.

AMONG all the colours that blooms assume, none are less associated with fragrance than scarlet. We cannot at present recollect a bright scarlet blossom that is sweet-scented—yet no other colour among flowers is more admired and sought after. Scarlet prevails among *Balsamina*, *Euphorbia*, *Pelargonium*, *Poppy*, *Salvia*, *Bouvardia*, and *Verbena*, yet none of the scarlets are of sweet perfumes. Some of the light-coloured *Balsams* and *Verbenas* are sweet-scented, but none of the scarlets are. The common Sage, with blue blooms, is odoriferous both in flower and foliage; but the scarlet *Salvia* are devoid of smell. None of the sweet-scented-leaved *Pelargoniums* have scarlet blooms, and none of the scarlet bloomers have sweet scent of leaves nor of blooms. Some of the white-margined *Poppies* have pleasant odours; but the British scarlets are not sweet-scented. The British white-blooming Hawthorn is of the most delightful fragrance; the scarlet-flowering has no smell. Some of the *Honeysuckles* are sweetly perfumed, but the *Scarlet Trumpet* is scentless.

All the Beans with light blossoms have pleasant odours, but not the *Scarlet Runner*. The Rose gives fragrance to all its colours, but the *Gloire de Rosemère*, which approaches nearest to scarlet, is as scentless as the *Yellow Harrison*. The florists' varieties of *Tulip* have a gentle odour, but the scarlet has as little perfume as the yellow. Many of the flowering shrubs have very fragrant blossoms; but the scarlet *Cydonia* has no smell. *Carnations* and *Gilliflowers* have some blooms approaching to scarlet—they are fragrant.

There are plants that bear scarlet blooms or scarlet fruits, suitable for every department of ornamental gardening, and every department should be adorned with scarlet, or a near representation thereof, for no decorations are complete without it. In glass houses there are *Bouvardias*, *Cupheas*, *Euphorbias*, *Alonsoas*, *Pelargonium*, *Gilliflower*, *Leschenaultia*, *Manettia*, *Salvias*, with scarlet blooms, and *Poinsettia* with scarlet bracts, and *Ardisia* with scarlet berries. For out-door flower beds, *Cannas*, *Balsams*, *Carnations*, *Gilliflowers*, *Cacalia*, *Lobelia cardinalis*, *Lychnis*, *Bouvardias*, *Pelargoniums*, *Cupheas*, *Salvias*, *Gladiolus*, *Tulips*, *Verbenas*, *Zinnias*, &c.

For Climbers, *Scarlet Trumpet Honeysuckle*, *Manettia*, *Cypress vine*, *Scarlet Runner Bean*, &c. Amongst trees, *Cereis canadensis*, gives a representation in blooms in early spring, and *Scarlet Oak* and *Red Maple*, with leaves in autumn. Among Shrubs, *Sorbus* and deciduous *Enonymus*, and *Red Snowberry*, with fruits all fall and partly through the winter. *Cydonia*, with blooms in early spring, and *Tartarian Honeysuckle*, *Sweet Briars*, &c., with fruits through the autumn. In those different departments the sight can be feasted upon scarlet all the year round; and the scent can feast upon the fragrance of very many other kinds of plants.

Many of our enterprising florists and seedsmen have given a fresh impulse to the love of floriculture, with their finely illustrated catalogues, within the past few years. They would even be more intelligible if they had abbreviations of the colours of all species and varieties, and then the purchasers could select, sow, and plant more knowingly, to adorn their parterres with all colours, and especially dazzling scarlet.—WALTER ELDER (*American Gardener's Monthly*).

A QUICK GROWTH.—The new early Peas, *Ringleader*, sown on the 12th of February, were last week harvested—fully ripe, at Messrs. Sutton's Farm, London Road, Reading.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE ground is now in good order for the reception of autumn and winter crops, and no delay should occur in planting out a quantity of the most forward *Brussels Sprouts*, *Savoy*, and *Broccoli*. Those who have their first Peas cleared off the ground will be so far fortunate, but there are not many places where there is ground enough to enable the gardener to have only one crop on the ground at once. *Broccoli*, large breadths of the

winter and spring sorts should now be planted out as vacant pieces of ground fall in. *Celery*, now is a good time to put in the first main crop. A few trenches will have been previously planted. To save ground it is recommended to plant it all in beds about 4 feet wide, with ridges of the same width between, sowing a row of Peas along the centre of the ridge, and using the trench for Lettuces, &c., before it is wanted for *Celery*. The beds intended for late *Celery* are narrower, should be manured as soon as possible in the spring, and should be planted with early Potatoes to succeed those in frames. The trenches should be formed with a high and low side resembling a turf pit, strong stakes to be laid across from side to side, upon which common hurdles wattled with spruce fir branches are to be drawn up and down according to the weather. This method may be useful to the amateur who is fond of Peas and *Celery*, and has but little ground at his command. *Cauliflowers*, *Endive*, and other autumnal succession crops, to be planted out at regular intervals; and see that there are no plants left to run to seed among beds of Carrots, Salsafy, Scorzonera, Skirret, and Chicory, all of which are liable to throw up seedstalks.

FRUIT GARDEN.

The routine of thinning and tying-in the summer growth, and the destruction of insects, must still be attended to. All stone fruit trees may now be budded, spring grafts looked over, the clay broken, and the bandages loosened. The grafts must have stakes put to them, or they will be broken off the first windy day. Those persons who have Vines trained on a cottage or in other parts of the garden should examine and carefully regulate the branches, taking care to retain no more young wood and fruit-bearing shoots than the Vines are capable of supporting and bringing to maturity. The fruit-bearing branches, if it has not already been done, should now have their tops pinched off two eyes above the bunch, and the others may be stopped in the same manner when they have reached about 20 inches in length. After this stopping, at most of the eyes the Vines will in all probability throw out laterals, which should be nipped off immediately above the first joint, taking care, however, not to injure it for fear of prematurely starting the bud at the base. No more shoots should be allowed to remain than are necessary to cover the space there may be for training them. It is always better to keep Vines thin and open than to crowd the branches together, for loading the plant with a superabundance of wood only serves to weaken it and rob the fruit of much of its nourishment.

FLOWER GARDEN.

From the beginning to the middle of July is the best time in the year to increase Roses from layers. The shoots are less brittle now, and on that account easier to handle than when they are ripe. There is also much time saved by summer-layering, as the layers will be rooted and fit to be bedded-out in nursery rows next November. Besides, there need be no cold fingers as when the work is done in February or March. Those who intend to grow Roses in pots for exhibition or private use, and for early forcing, should have their plants worked on some of the free-growing China Roses. These are now throwing up from near the bottom strong suckers or shoots, which may be layered for stocks and budded immediately. The height at which these should be budded is a matter of taste. A few standard Roses are very useful in the conservatory early in spring, and their ugly stems can always be hidden by other plants. For exhibition, on the other hand, standards will not do at all, unless they are exceedingly well managed, and rather dwarf than otherwise. For mere pot culture stocks of the common China Rose are as good as any. The Bourraulte, however, possessing the softness and excitability of the Chinas with the hardiness of the Ayrshire, are considered by growers to be the best stocks for general purposes. Any variety of this section will answer; Drummond's Thornless is one of them. In preparing the shoots for layering be very particular in picking out all the buds below the places where the new buds are to be inserted. This will keep the stocks always free from suckers and side shoots—not, however, unless the shoots are of this year's growth, as we have no power over older shoots, which are already coated over with a layer of organisable matter that can throw out buds anywhere. Early Tulips, Hyacinths, Narcissus, &c., may now be taken up, dried, and cleaned in a dry shed, and be put up in the seed room till planting-out time. To have beautiful little plants of *Chrysanthemum* with large heads of flowers, you must begin now by selecting the strongest shoots on the plants growing in the open ground, draw them out along the ground, and at 3 or

4 inches from the top peg them down. They will soon turn up their points again, and in about a fortnight or three weeks you may sink pots full of rich mould under the beds, and layer these shoots, letting the bend down near the bottom of the pot. The pots will soon be full of roots, and on a damp evening you can cut off the shoots and remove your plants to a close frame.

GREENHOUSE AND CONSERVATORY.

Greenhouse plants will now do well enough with the usual routine of watering, syringing in the evening, tying, staking, and training, as may be requisite. As all but the very best specimens are now removed from this house you will have room to introduce annuals, placing three or four of them in large pots; with a little care they will be useful for the conservatory. There is no scarcity of flowers in the conservatory now. The usual routine of training the climbers and keeping the other plants in order, together with neatness, is all that is immediately wanted; but keep a good eye to your winter stock. Camellias that have formed their flower buds may now be potted; those of them that are to flower early should be kept in-doors all summer, but the spring-flowering ones may be turned out. Anne Boleyn Pinks for forcing ought now to be in a forward state, and if they show symptoms of flowering pinch off the stems as they appear. This is the proper time to attend diligently to such plants as will flower from October to May.

STOVE.

If any established stove plants require another shift this summer let it be given soon, but avoid shifting large specimens so late if you can; rather encourage them with a little liquid manure occasionally. Young plants may be potted as they may require for the next two months. Do not neglect to make cuttings of *Justicias*, *Clerodendrons*, and similar useful plants early in July for flowering next year. These will form beautiful plants before the end of October. *Pentas carnea* belongs to this class; it is a very useful plant in winter, and may be had in flower all the year round. Air, moisture, and cleanliness, as usual, are requisite.

PITS AND FRAMES.

These are the best places to grow the most choice sorts of greenhouse plants in summer. Heaths that have not yet flowered should not have any shade over the glass, as they set their flower buds much better in the full sun. Syringe all the plants here every evening, so as to preserve a cool refreshing temperature all night.—W. KEANE.

DOINGS OF THE LAST WEEK.

The work has to a great extent been of a routine character, and besides Grape-thinning, potting, &c., the great aim has been to keep everything growing with as little watering as possible.

KITCHEN GARDEN.

Some fine rows of Peas coming into bloom we were obliged to water, and then mulch along the sides to keep the moisture in, as the foliage was becoming of a light slaty colour, and the blossom was refusing to set. A plantation of *Cauliflowers*, our third succession, was also changing colour, and we were afraid they would knot for bloom too soon, and come to little, and these we watered, then covered the ground with dry litter, and shook a little of the cleanest over the leaves to moderate the force of the sun's rays. Strawberries in pots, which we intended planting, but could not, after being watered were sprinkled over with litter rather more thickly to keep the heat from evaporating the moisture too soon. Having a tank to clean out, and at no great distance from the *Celery*-bed trenches, we planted several beds, raising the plants with large balls, and turning them out into well-aired soil pretty liberally supplied with rotten dung. After watering them well we scattered litter over the plants as well as the beds, and the hottest sun seemed to have little effect on the plants. A brisk wind or a heavy shower will send the litter off the plants, and it will do no harm lying on the surface. Finding that Turnips would be bitter where fully exposed, unless they had more water than we could give them, we likewise afforded them a little shade by a similar means. Such a mode of slightly sprinkling with litter answers better than the shade of a mat, &c., for common purposes, not so well, of course, as tiffany would do; but then that, however used, will tell in the garden expenses.

For a long time we have had little to do with shading material

for houses, but for these nothing answers better than a screen of white tiffany or other light textile material, fixed with rings inside during the summer months. It will thus take off the force of the sun's rays, and will not make the houses too dark in a dull day. The lessening of evaporation from the foliage by any such means enables the plants to withstand hot weather longer without watering. Four years ago we were obliged to cover up many plants in a shady place; but though we are obliged to be moderate in watering, still it would be some weeks before we should be reduced to such a strait as that, and such summers often do good in leading us to contrive how to save water that otherwise would run to waste. With more care in thus saving the water in large reservoirs, a force-pump to raise the water to an elevated cistern, and connecting pipes with our tanks, we feel we could be almost as independent as the gardener not far from a river, who had, nevertheless, most of the water to carry. With a cistern high enough we could use a hose at once.

In sowing Carrots, Turnips, Beans, Lettuces, &c. in such weather, we find it is a useful plan to draw the drills, water them before sowing, cover in the usual way, and then slightly litter the ground before the seeds are up, when the litter can be moved from the rows to prevent the young plants becoming drawn and weakly. If such weather continue it is better to depend for salads on Lettuces sown, rather than on those transplanted, and much watering is thus saved, as the sown plant sends its roots deep and is nearly independent of watering even in dry weather. In fact, but for scarcity of ground, we would throughout the summer prefer sowing all the Lettuce tribe thinly.

Far too often there is a scarcity of ground in the kitchen garden, and huge unwieldy lawns that might in many cases be better turned into park scenery. A gentleman is content to receive, with many drawbacks, from £1 to £2 per acre for his agricultural land, which, after cleaning and fallowing, seldom produces more than one crop in the year, and yet he expects numerous crops in the season from similar land because it is called a garden instead of a field. For ourselves it was quite a change to see this summer a piece of ridged-up bare ground on which Raspberries had grown, and which were stubbed-up after a succession was secured. But for pressing matters that ground would not have been idle, and it is now cropped with Peas at wide intervals, with half a dozen rows of Winter Greens, the most forward, between the rows of Peas.

Cropping.—When many crops are taken from the land, and several are coming on at the same time, the produce individually will not be so good as when the land bears only one crop at a time. For instance, it cannot be supposed that Broccoli planted between rows of Peas or Potatoes will yield such magnificent heads in spring as that which has had the ground wholly to itself, and the plants have been no closer than 30 inches on the square from each other. Very good heads for the table can be had from the close rotation, and the varied simultaneous system of cropping; but that is not the plan to have large individual heads that would require almost a basket for each.

Do not let it be supposed that we advocate large walled-in gardens as a rule, for in many cases they are as much a mistake as large pleasure grounds with insufficient labour to keep them well, believing as we do, that ten poles of a lawn that cannot be improved, will be more satisfactory than ten acres that have merely a semblance of keeping. On the other hand, we know several places where the kitchen garden is too small, where fruit and vegetables, and plenty of them for a large establishment are expected from something like an acre of ground. Now, in such cases, it is necessary either that the garden outside the walls should be enlarged, or that the root and other rough crops should be grown in the field, and the garden thus relieved of such continuous cropping. In some of these places we have known a free succession of gardeners, able, intelligent men; and the employers, kind-hearted and considerate, would much rather they had remained, were satisfied with their conduct, and would in several cases have held out extra remuneration for them to remain, knowing well that if there are advantages at times in changing, there is more likely, for a time, at least, to be disadvantages, as it will be some time before a new man gets acquainted with the place, and with the peculiar wishes of the family and establishment. It is very pleasant to hear a gentleman say, "I am so sorry that Mr. A. would leave me. He was such a good, industrious, faithful servant; but I hope he will get on well wherever he

settles. I shall always esteem him, &c." Now, the secret of leaving, to our knowledge, in a number of such cases, was the smallness of the garden. The gardener saw that with the same ground the demands every year were increasing, and he felt that the time would come when inability to meet the growing demand might lead to disappointment; and as hints as to increased room, or growing some of the crops in the field passed unheeded, he preferred leaving instead of encountering any unpleasantness from such a cause. In the whole of such cases it would have been easy to have taken from a field or park outside the walls the ground that would have been necessary, surrounding it with a Privet hedge, a wire fence, or a picturesque bank of Laurels, &c.; or to have made arrangements that beyond the earlier crops the bulk of the root crops should have been grown in a field, and so grown they are generally sweeter and better than when cultivated long in an old kitchen garden. A huge walled garden may be a huge mistake. A very small kitchen garden may also be a mistake, and fruitful of disappointment and unpleasantness.

FRUIT GARDEN.

Air-giving.—To lessen the necessity of so much watering, we afforded little front air, but gave it at night and early in the morning. We are not yet fully convinced, in general, how gradually a house rises in temperature with air early given, and with the heated air outside partially shut out. A Peninsular officer, who, bold among the bold, had also a keen sense of the comfortable, told us how after a hot march in Spain, he cooled his wine by hanging the bottle in a worsted stocking full in the sun, and had a lad to stand by and keep the stocking moist. The evaporation from the stocking cooled the bottle. He also contended that the true plan for keeping rooms cool in summer, was to keep the heated air of the day from entering. After the evening and early morning the windows were kept close and shaded. A glass corridor was likewise kept shut, the doors and windows of rooms connected with it also shut and shaded, and though outside the temperature was melting, that of the rooms resembled the coolness of the passages of an ice house. This furnished proofs on a large scale of what we have several times alluded to, that confined air is one of the best non-conductors of heat. Could the corridor have been air-proof, the coolness of the rooms in summer and their warmth in winter would have been more thoroughly secured.

We could not carry out such an idea in our glass houses without double glass; but even for the saving of water we gave less air than we otherwise would have done, and we observed no ill effects until about the middle of the week we noticed some leaves of Peaches coloured by the attacks of *red spider* in the orchard house, though previously quite free from it, notwithstanding the heat and our unwillingness to syringe, as we otherwise would have done freely, on account of the water not being quite to our mind. We syringed with soot water, followed with weak clear soft-soap water next day, and then we did what we should have done a month ago—daubed the open places of the wall with a paint of sulphur and soft soap. We have examined a number of the leaves to-day with a glass, and though finding some dead, we found none alive. We shall, therefore, use clear soot water in syringing, and syringe a little more than we have done; but the sulphur fumes given off by the wall where daubed in a clear sun will be one of the best means for settling those there, and keeping other spiders from trespassing. How suddenly such vexations come! A couple of days previously we could not see a discoloured leaf. We are sorry to say that the red spider seems bent on attacking Dwarf Kidney Beans out of doors. Some of these we pulled up and burned, as they were near trees that might soon be affected. Such scorching weather is just the delight of this insect. Weak soap water and clear soot water do much to keep it away. Dampening the floors has not kept it quite out of the orchard house, and now the insect must be overcome, or farewell to fine-flavoured fruit.

ORNAMENTAL DEPARTMENT.

Much the same as last week. Used little water in beds for a week, only when plants were suffering. As a rule they are doing well, and rooting freely, only needing a drizzling cloudy day or two to give them a chance to push out their dormant energies.

We have many plants, as Antirrhinums, Everlastings, and even Sweet Peas, to plant out; and they must go out and be watered if we have no rain, though we would have preferred the ground to have been damper and cooler before turning them out.

Now is a good time to mark all Pinks, if the pipings or cut-

tings are not taken off directly. Cuttings of Pansies may now be inserted under glass in a shady place, and air given at night. Plants from seed sown now will bloom in the autumn. Hollyhocks and Dahlias need plenty of watering and mulching where this dry weather prevails. Several beds in which we mean the brown Coleus to be a prominent feature we have not yet planted out; but the strong plants in pots are freely exposed, and we hope they will not become dirty brown with us this season.

In the flower garden as a whole we are becoming reconciled to feathered intruders; only that for the sake of the families of young pheasants, rather too young to take themselves farther afield, we cannot have a beat for the rabbits, which are rather vexing us by eating close to the ground lines and edgings of Lobelia. Without netting it is difficult to know what to do. We strewed with a trowel on each side of such rows a line of fresh lime and soot, and then sprinkled these lines sparingly, without touching the plants, with flowers of sulphur. For four nights the Lobelia has been let alone by the intruders. The fumes given off seem to be not to their taste. We expect that when heavy rains come the remedy will have lost its power. At present the application has been useful, and the fumes are rather strong. The plants are growing strongly, and though later than desirable, would yet do well if let alone, and not cropped down again.

Much time has been taken up in arranging corridors, conservatories, &c.—a matter more difficult than it used to be, as the roofs of our fruit houses are too thickly covered to permit after this season of growing much beneath them. For the same reason we must keep many of the Azaleas in a place by themselves in the conservatory, and syringe and keep them closer there, whilst flowering plants at the other end will have more air. These matters are more easily managed when such plants after flowering can be put in a house by themselves; but many must do what they can when they cannot accomplish what they would.—R. F.

COVENT GARDEN MARKET.—JUNE 21.

We have experienced a large increase in our supplies since last week, and consequently a great reduction has taken place in the price of some articles, and especially of forced fruits. Grapes and Pines are much in excess of our requirements, and there are very few Peaches and Nectarines that come up to a good standard. Some good Shaw Potatoes are now coming in from Kent, and in many places the new crop of Potatoes will soon be ready for lifting. Prices range from 4s. to 6s. per bushel.

FRUIT.

	s. d.	s. d.		s. d.	s. d.			
Apples 1/2 sieve	1	6	0	Melons..... each	3	0	6	0
Apricots doz.	2	0	4	Nectarines..... doz.	6	0	1	0
Cherries lb.	0	6	1	Oranges..... 100	12	0	0	0
Chestnuts..... bush.	0	0	0	Peaches..... doz.	8	0	2	0
Currants..... 1/2 sieve	4	0	0	Pears (dessert) .. doz.	0	0	0	0
Black doz.	4	0	5	Pine Apples..... lb.	5	0	8	0
Figs doz.	4	0	8	Plums 1/2 sieve	0	0	0	0
Filberts.....lb.	1	0	0	Quinces..... doz.	0	0	0	0
Cobs..... lb.	0	9	1	Raspberries.....lb.	0	4	0	8
Gooseberries .. quart	0	4	0	Strawberries... per lb.	0	6	1	0
Grapes, Hothouse.. lb.	3	0	6	Walnuts..... bush.	10	0	12	0
Lemons..... 100	8	0	12	do. per 100	1	0	2	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes doz.	2	0	3	0	0
Asparagus 100	2	0	6	0	0
Beans, Kidney 100	1	0	1	6	0
Beet, Red..... doz.	2	0	3	0	0
Broccoli bundle	0	0	0	0	0
Brns. Sprouts 1/2 sieve	0	0	0	0	0
Cabbage doz.	1	0	1	6	0
Capicums..... 100	0	0	0	0	0
Carrots..... bunch	0	6	1	0	0
Cauliflower..... doz.	3	0	6	0	0
Celery bundle	1	6	2	0	0
Cucumbers..... each	0	4	1	0	0
Endive doz.	2	0	0	0	0
Fennel bunch	0	3	0	0	0
Garlic lb.	0	8	0	0	0
Herbs bunch	0	3	0	0	0
Horse-radish .. bundle	3	0	5	0	0
Leeks bunch	0	4	0	0	0
Lettuce..... per score	0	6	1	0	0
Mushrooms.... pottle	3	0	4	0	0
Must.& Cress, punnet	0	2	0	0	0
Onions..... per bushel	6	0	7	0	0
Parsley..... per sieve	3	0	4	0	0
Parsnips..... doz.	0	9	1	6	0
Pears..... per quart	0	9	1	0	0
Potatoes..... bushel	4	6	6	0	0
Kidney..... do.	4	0	6	0	0
Radishes doz. bunches	0	6	0	9	0
Rhubarb..... bundle	0	4	0	8	0
Sea-kale..... basket	0	0	0	0	0
Shallots..... lb.	0	8	0	0	0
Spinach..... bushel	2	0	3	6	0
Tomatoes..... per doz.	3	0	4	6	0
Turnips..... bunch	0	6	1	0	0

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

Books (Atlas).—If you wish only to manage a small plot, "How to Farm Two Acres Profitably" will suit you. You can have it free by post from our office if you enclose fourteen postage stamps with your address.

ROYAL HORTICULTURAL SOCIETY'S LEICESTER SHOW (H. T.).—Apply to Mr. Eyles, Royal Horticultural Society, South Kensington, London, W.

GOLDEN-LEAVED PELARGONIUMS AT THE ROYAL HORTICULTURAL SOCIETY'S SHOW.—Golden Emperor which received the first prize as the best Golden-leaved variety not in commerce, was exhibited by Messrs. Saltmarsh & Son, of Chelmsford, and not by Messrs. Downie & Co., as stated in page 438. The report there given was originally correct, but finding by the official prize list that the variety referred to was ascribed to Messrs. Downie & Co., and thinking that some mistake had occurred in the cards (and of such we have met with several instances lately), that which was correct was altered to that which was wrong.

RENNET (REINETTE) APPLE (Alpha).—Your inquiry why that name was applied to various Apples is best answered by the following quotation from Drayton's Polyblon:—"When a Pepin is planted (grafted), on a Pepin stock, the fruit growing thereon is called a *Rennet*, a most delicious fruit, as both by sire and dam are well descended." We quote the extract from old Fuller. *Reinette*, literally, is a little queen.

ERADICATING THISTLES (—).—The best way to eradicate Thistles in pasture land is to ent them with a spud a few inches below the surface. It should be done early in June and again in August. The best spud is one to which is attached a box for salt, and on the spud being thrust into the ground and withdrawn salt is deposited over the root. The root then seldom recovers. The Thistles may be kept under by cutting them with a scythe close to the ground three times a year—namely, at the end of May or early in June, in the middle of July, and at the end of August.

CUCUMBERS AND LETTUCES AT CHRISTMAS (Idem).—You may have Cucumbers at Christmas if you have a small house or pit which can be heated to 60° or 65° at night, and 70° or 75° by day. There must be a bed for bottom heat in which the plants can be planted. No great expense need be incurred in the growth of water Cucumbers. Lettuces may be had at Christmas by lifting a number of plants in October or November with good balls of earth, and planting them in a cool house, pit, or frame. Give a good watering after planting, then water sparingly, and give plenty of air and protection from frost.

CAMELIAS NOT FLOWERING (A. H. Holden).—The temperature you name is much too high for Camellias. One of from 60° to 75° is certainly desirable for a time after the flowering, or from March to the end of June, but after that the plants would be better of a cool house where there is no artificial heat. We think that the atmosphere is much too dry, and the plants not sufficiently supplied with water, and that therefore the leaves fall off. Keep the plants cooler and give a plentiful supply of water. It will be enough if they are kept from frost in winter. A few degrees of frost will be far better than a high temperature at that season.

BUDGING APPLE AND PEAR TREES (A. Norrie).—It is an excellent practice to bud Apple and Pear stocks on which grafts have failed in the spring. The end of the present month and early in July would be a good time to bud, and it may be practised with Plums and Cherries as well. The Manetti Rose is a free-growing kind, extensively used as a stock for grafting and budding Roses on for dwarfs. It may be had of almost all nurserymen. Any nurseryman would procure plants for you. The present is not a suitable time unless they are in pots.

PELARGONIUM AND GERANIUM (Idem).—What are frequently, but incorrectly, termed Geraniums are Pelargoniums; and if you see the same plants under both heads the only distinction is, that in one case the proper generic name is applied, in the other the improper but customary one. The genus *Geranium* has been divided into three genera—*Geranium*, *Pelargonium*, and *Erodium*. They all belong to the natural order *Geraniaceae*. *Pelargonium* is characterised by having usually seven stamens, and unequal-sized petals; *Geranium*, by having ten stamens, and equal-sized petals; and *Erodium*, by having five fertile anthers usually.

PELARGONIUM CULTURE (Idem).—When your Pelargoniums are done flowering set them out of doors in a sunny place, and then cut them well back, and they will grow dwarf and stubby. If you have plenty of room do not prune back so much, but bend down the stems, and shoots will come from each joint.

LAWN (J. D.).—Your lawn must be very wet to encourage the growth of moss at this season. A dressing of superphosphate of lime may be given, but we would not apply it until the ground is wet and rain likely to follow soon after the dressing.

STRAWBERRY BEDS (Idem).—We have had very productive beds of Strawberries at the end of six years, but of late we have not kept our beds beyond the third or fourth year. We break up a number of beds every year and make a new plantation. We have, therefore, no lack of supply, as we find the seasons have a great influence on the crop. With us the plants produce the best crop in the second year, and in very rich ground we have found the crop greater in the third than in the two preceding seasons. We plant early in August, putting a number in beds rather thickly, and these plants are very useful for filling up any blanks in the new plantations; and moved with balls they are excellent for new plantations. March is a good time to plant those put in rather thickly in beds in August.

PEARS BLACKENED AND FALLING (Lemon Buff).—The Pear sent us is destroyed by some insect entering by the eye of the fruit and completely destroying the interior. The specimen was so smashed in passing through the post office, that we could not detect the insect causing the mischief. We have many young fruit turning black as yours are, and falling, chiefly owing to imperfect fecundation. The Pears which thus fall are seedless.

SOWING SAXIFRAGE SEED (King Theodore).—Now is a good time to sow Saxifrage seed. Well drain the pot or pan—indeed fill it to within an inch of the rim with pieces of sandstone, or grit, and corks; then to the rim with a compost of turfy peat, sandy fibrous loam, and silver sand in equal quantities. Make the soil very fine, level the surface, sow the seed rather thickly, and give the least possible covering of very fine soil. Place the pot in a shady place, and cover it with a bell or hand-glass, keeping the surface moist. When the surface becomes green give air by tilting the glass, admitting more as the plants grow, and when of a size fit to handle prick them off in pans prepared in the same manner as the seed pot. Protect with a frame during the winter, giving an abundance of air in mild weather and a little at all times. The seed may be procured of any seedsman, and plants obtained from the principal nurserymen. We cannot recommend one in particular.

SOWING PELARGONIUM SEED (Idem).—The seed should be sown as soon

as it is ripe, any time from now up to October, in pots or pans placed near the glass in a greenhouse. There is but one mode of cross-fertilising—that is, by taking the pollen from one species or variety and applying it to the stigma of another. The pollen is best applied with a camel's hair pencil.

CHERRIES FALLING (*Cliftonensis*).—The fruit sent has not stoned, and that is the cause of its falling. It is, of course, seedless. We think the reason is the aspect, and consider the Downton variety succeeds better as a standard than against a wall with a north aspect, which, however good for the Morello, does not answer for the Downton. It succeeds and well deserves a place against an east wall.

VARIOUS (*T. T.*).—We approve of most of your arrangements, but not of your proposed painting or dotting the glass with white lead, as it will make the roof permanently opaque, which is not desirable, particularly as your house receives no sun in winter. Instead of the white lead we would advise you to paint the glass inside, when the sun becomes powerful, with a mixture of Spanish white, brought to the consistency of paint by the addition of milk. It can be easily repeated if necessary, and may be washed off in autumn. You will not have room for more than a dozen plants in each house; and of stove plants we would have *Alocasia metallica*, *Anthurium scherzerianum*, *Croton variegatum*, *C. angustifolium*, *Maranta Veitchii*, *Caladium Chautini*, *Pandanus japonicus*, *variegatus*, *Dracena stricta*, *Gardenia citriodora*, *Ixora coccinea*, *Gesnera refulgens*, *Rondeletia speciosa major*. Climbers for roof—*Stephanotis floribunda*, which will cover the whole roof. For baskets—*Pothos argyrea*, *Pentas carnea*, and *Ascyanthus speciosus* and *pulchellus*. The back wall may be covered with *Cedrus discolor*. The plants may be occasionally syringed, but it is best to keep up a moist atmosphere and syringe in the evening only. For the cool division—*Acrophyllum venosum*, *Boronia Drummondii*, *Chorozema cordatum splendens*, *Crowea saligna major*, *Monochatum cuscutum*, *Pimelea Hendersoni*, *Genetyllis tulipifera*, *Kalanthes miniata grandiflora*, *Luculia gratissima*, *Nerium rubrum plenum*, *Imantophyllum miniatum*. Climbers—*Hoya carnea*, *Mandevilla suaveolens*, and *Mutisia decurrens*. For baskets—*Stanhopaea oculata*, *S. tigrina*, *Adiantum setulosum*, and *Platycentrum alceiforme*. The back wall may be covered with *Habenaria elegans*, or *Luculia gratissima*. The only means of knowing how much tobacco will be required for the fumigation of the house, is to fill it so that a plant cannot be seen from the outside through the glass. The fumigation should then cease, and not till then. Half a pound of tobacco leaf chopped or cut up roughly will be sufficient for one of the compartments. We do not know of any one likely to meet your wants with respect to a gas stove and boiler. *Gloxinia* leaves curl from being kept in too dry an atmosphere, and under too powerful a light. Shade from bright sun for a few hours during the hottest part of the day, and give water liberally, with a moist atmosphere. Variegated plants, as a rule, are impatient of syringing, and should therefore be well supplied with atmospheric moisture by sprinkling the paths, doors, walls, &c., two or three times a day. An occasional syringing will not do any harm providing air be given early, so as to have the foliage dry by the time the sun's rays fall on the plants. *Heliotropes* succeed well in a compost of turfy sandy loam two-thirds, and leaf mould one-third. *Voltaireanum*, *Etoile de Marseille*, and *peruvianum* are good sorts of *Heliotropes* for a wall. They should be repotted in spring when they are beginning to grow, and have a shift into a larger pot in June. The treatment is very simple: they merely require plenty of water when in free growth and flowering, and when at rest keep the soil rather dry, but not so much so as to cause the wood to shrivel and perish. After the plants have had a rest prune them as is required, and encourage growth by a moist atmosphere. Cocoa-nut refuse is still extensively used as a compost for Ferns. It is a good substitute for peat if mixed with loam, but is not suitable for *Heaths*, nor for the very delicate thread-like fibres of such plants as *Azaleas* until it is reduced by age to a black close mass, and then it answers quite as well as peat, silver sand being liberally added.

MISTLE-LEAVED ORANGE LOSING ITS LEAVES (*A. Subscriber*).—We would at once examine the drainage, and if bad rectify it. We would, if necessary, repot the plant in a compost of loam from turves taken from a pasture where the soil is a loam of good medium texture, but not very strong, paring off the turf 12 or 2 inches thick, and with the hand tearing it in pieces about an inch square. Remove most of the old soil, and pot rather firmly in the new compost. No manure need be used, but add one-fourth part of sandstone, broken to the size of a hazel nut, using the small pieces as well as the lumps. If convenient, place the plant in a house where there is a brisk heat of from 60 to 65 at night, and from 75° to 80° by day, a moist and rather close atmosphere being maintained, with shade from bright sun. Avoid saturating the soil until the roots are working freely, then water liberally. The plants should be syringed

overhead twice or thrice a-day. The head being very full of small shoots or twigs, thin it and cut them well in. When a good growth is made harden off by degrees. The manure water, if not too strong, would not cause the leaves to fall; but a powerful dose of liquid manure may have destroyed the roots, and so have caused the leaves to fall. Watering with liquid manure would conduce rather to growth than to fruitfulness, and we think the barrenness not attributable to a want of sufficient support. The reverse would be the case.

HEADING-BACK A PEACH TREE (*A. Subscriber*).—We do not see what you will gain by heading-back to B, unless you have shoots on the lowest horizontal branches that could be trained in place of those cut away. If you cut off the head of the tree at B, and have no shoot near B on the side branches which could be trained as leader, we think you will lose the head entirely, as you cannot expect shoots from a branch 7 inches in girth, and it is likely gum would follow cutting it, if not the dying-back of the stem below the cut. We presume you have enough side shoots; in that case leave the tree as it is, and by closely stopping the shoots and laterals on the branches between A, A, the sap will be diverted into the lowest side branches, and by not stopping them you may renew them by training in a well-disposed shoot in place of the weak side branches.

PEACH-TREE LEAVES BLISTERED (*Idem*).—The blistering of Peach-tree leaves is caused by cold, especially when preceded by a period of warmth, and is very prevalent this season, the days being very bright and hot, and the nights cold though not remarkably frosty. There is no remedy, but the evil may be prevented by affording a warm covering. Tiffany would be a much better protecting material than netting. No. 3 tiffany would be equal to canvas, and is a very good material. It would repay the cost. Tiffany when used as netting must not be left over the trees constantly, but be drawn up in fine mild days and let down at night. On cold days the covering may remain over the trees.

SCARLET GEM MELON PLANT FASCICATED (*J. Fleming*).—It is evidently a case of fasciation, and one of the most interesting specimens of it which we have seen. What are the circumstances under which the plant has been grown?

VINE LEAVES WARTED (*J. M.*).—The Vine most likely will grow out of the warts on the leaves. The warts are produced by a rather moist atmosphere, and too much moisture at the roots, and the leaves cannot part freely with the moisture by evaporation. More air and less moisture are the best remedies. The Black Hamburgh in this respect is a weaker Vine than the Muscat of Alexandria.

VINE BLOSSOM SCORCHED (*Black Hambro*).—In such a case as yours we would open the ends of your groundinery. We would prefer doing this to opening the roof, as the heated air would freely escape at the ends in such short lengths. We cannot account for the scorching with all the air on at the sides, but in hot days we certainly would like to have the ends to move, especially the half next the ridge.

ROSES (*An Old Subscriber*).—We cannot undertake to name florists' flowers. They are too numerous, and so many are nearly alike.

SEEDLING PELARGONIUMS, &c. (*N.*).—Not so good as many others of the same colour. The Rose appears worth keeping for garden decoration, but the specimen sent would not satisfy a florist.

PELARGONIUM (*J. Tomkins*).—We cannot undertake to name florists' flowers.

INSECTS (*R. F. M.*).—*Notonecta glauca*. This water bug (misnamed novocata, and spoken of as a beetle), feeds upon other water insects. It is common in every piece of standing water. (*M. A. M.*)—The small snails sent are half-grown specimens of *Zonitis pellicida*, a small British species. They and all snails are especially fond of brewers' grains, which they will eat in preference to your Orchids. The grubs are the larva of the pretty Asparagus beetle, *Crioceris Asparagi*. Hand-picking is the only really effective remedy. (*C. B.*)—We still believe the curling of your Rose leaves to have been caused by mildew or other atmospheric cause, which brought them into a state especially agreeable to some of the many species of small caterpillars which feed on the leaves. Yours were so dried up as not to allow of investigation.—W.

NAMES OF PLANTS (*Julia*).—*Astilbe rivularis*. (*Yorkshire*).—Yellow. *Cotula*, sp. Red. *Gaultheria reticulata*. (*E. M. R.*).—1, *Erica splendens*; 2 and 3, *E. jasminiflora*; 4, *E. decora*. (*H.*).—1, *Nepeta Massinii*; 2, *Escallonia rubra*. (*Wexford Subscriber*).—*Asplenium macrosporum*. (*G. A. S.*).—1, *Davallia lineata*; 2, *Oncoclea sensibilis*; 3, *Nephrodium flaccidum*; 5, *Adiantum cuneatum*. (*Young Gardener*).—1, *Philadelphium tomentosum*; 2, *Tenacium fruticosum*; 3, *Corydalis lutea*. (*H. L.*).—1, *Trifolium procumbens*; 2, *Euphorbia helioscopia*; 3, *Veronica agrestis*; 4, *V. variegata*; 5, *V. scryphifolia*; 6, *V. Buxbaumii*. (*J. G. L.*).—*Pajanelia Rheedii* (large); *Coltena frutescens* (small). (*G. M. C. W.*).—1, *Scaevola crassifolia*; 3, *Zenobia speciosa*; 4, *Spiraea Douglasii*; 5, *Ribes speciosa*; 6, *Spiraea arifolia*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the week ending June 23rd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Wed... 17	30.245	30.163	85	49	63	60	W.	.00	Overcast and cloudy; fine; clear and fine.
Thurs. 18	30.294	30.145	75	59	63	60	N.E.	.00	Fine, high wind; very fine; fine at night.
Fri. .. 19	30.175	30.122	72	52	65	60	S.W.	.01	Fine; rather hoisterous; fine; clear.
Sat. .. 20	29.979	29.945	79	51	63	60	S.	.06	Hazy, heavy clouds; thunder and rain; fine at night.
Sun... 21	29.876	29.928	83	53	64	60	S.W.	.16	Very fine; clear and fine; heavy showers, cloudy.
Mon... 22	29.739	29.689	71	42	64	60	S.W.	.02	Cloudy, overcast; showery; overcast.
Tues. 23	29.735	29.688	74	49	63	61	W.	.48	Very fine; overcast, rain; clear and fine.
Mean	30.013	29.917	77.14	48.14	63.57	60.61	..	0.52	

POULTRY, BEE, and HOUSEHOLD CHRONICLE

CRÈVE-CŒURS.

So many questions come to us about the French fowls, that we do as we did some years since—we print the description of

them as given by M. Jacque, who is equally gifted with pen and pencil. His drawings are certainly the best we ever saw of fowls. They represent the bird fairly, without exaggeration or mannerism. Each one has its separate points well defined. The Spanish has nothing of the Cochins, and the Poland nothing of the Dorking. But the truth never pleases. He says the

one hook on poultry got him into more hot water than every other act of his life. Half the poultry-keepers in France fell foul of him. He said too much for one breed, not enough of another. He was overwhelmed with unprofitable correspondence, pulled down his houses, sold his stock, and turned to other pursuits; nevertheless, he remains the greatest authority we have on these breeds.

We will now give the principal points he describes as belonging to the *Crève-Cœur*.

Ample body, square-built, wide, standing well on substantial legs; back almost horizontal, falling slightly towards the tail; breast, thighs, and wings well developed; limbs short; very large head; top-knot, whiskers, and beard; double comb in the shape of horns; wattle long and pendant; deaf ear small and hidden; four-toed; breast and belly feathers long and plentiful; flight feathers of the usual length; sickles and tail coverts very long; in excellent specimens plumage quite black, in ordinary ones yellow and whitish. Gait proud and serious.

An adult should weigh from 7 to 8 lbs. The flesh should be very abundant, bones weighing only one-eighth of the whole. Top-knot, ample, voluminous, heavy. The pointed feathers should fall all round the head in good specimens: the middle feathers should stand upright, and some should fall in front. Whiskers very full.

Beard long, voluminous, and falling below the wattles.

Comb variable, but always forming two horns; new parallel, upright, and fleshy; now joined at their base, slightly uneven, pointed and dividing at their summit, but always having some interior ramifications like the horns of a young stag.

Deaf ear whitish, of ordinary size, nearly hidden by the feathers of the whiskers and top-knot.

Wattles long, fleshy, and pendant. Nostrils open, large, and prominent.

Physiognomy of the head.—The eyes nearly disappear beneath the feathers of the top-knot. The comb, taking the form of horns, gives to the face of a *Crève-Cœur* the appearance of a satyr.

Colour of the leg black, or deep slate blue.

The plumage should be entirely black, relieved by metallic reflections, blue or greenish about the neck, on the hackle, wings, tail coverts, and large and small sickles. The rest is dead black save the feathers of the abdomen, which are of a brownish black. The top-knot generally becomes whitish at the back after the second or third moult.

Many specimens have the hackle, saddle, and tail coverts straw-coloured. They are pure, and breed pure birds, but they are less esteemed by judges.

Such is the description of the cock. The full-grown hen should weigh 6 lbs., should have a large head, and full top-knot. The latter differs somewhat. In some cases the feathers are short, leaving the eyes uncovered. In others the feathers are so abundant that the head is hidden in them, and the bird can only see things that are on the ground. Beard long, pendant, and strong, larger at bottom than at top; gills very small; deaf ear small and whitish, hidden in the top-knot and the whiskers.

The top-knot, which is black at first, becomes whiter and whiter each time after moulting.

GAME FOWLS IN FORMER YEARS.—No. 2.

THE most celebrated cock-fighting feeders of the last generation, before the sport was abolished by law, were Gilliver, of Colleshill; Potter, the late Earl of Derby's man, Gilliver's principal opponent; the two Nashes, Walters, Leicester, Neale, Tom Spring, Peter Crawley, Harry Gomm, Frank Redmond, Mountain, and others, chiefly provincial men. Gilliver was the most successful of them all, bought a house out of his earnings, and died in 1832, leaving a son, or nephew, who lives at Polesworth, North Warwickshire. Gilliver, senior, was a really good and well-known authority on all matters connected with Game fowls, though he fought far better birds, it is said, than he ever bred himself, and so was a better fighter and feeder than a breeder. Gilliver won seven of the largest and best-fought mains in England. Colleshill (1), Lichfield (2), Chester (3), Newton, Lancashire (4), Oxford (5), Manchester (6), and Preston, Lancashire (7). The one fought at Manchester was his best-fought main and was only just won. He was once well beaten at Manchester by the celebrated Manchester Brown Reds, and the Dark Greys and Cheshire Piles (white legs).

Gilliver won principally with the Brown Reds, and he classed

the best breeds of Game fowls in his district, the midland counties, as follows:—For the pit—1st, Brown Reds, brown breasts, greatest winners; 2nd, Dark Greys, hardest, least beaten of any—these two breeds the best birds; 3rd, Piles, red eyes, white legs, quite as sharp; 4th, Black-breasted Reds, white legs, less sharp; 5th, Duckwings, red eyes, willow legs, not quite so good. Black-breasted Reds (willow legs), Blacks, and most other colours he classed as inferior birds.

A Cheshire correspondent sent me the following list, classed in quality for the pit, at the present time in his district in Cheshire, the first named not common:—1st, Birchen Duns and Reds, quickest (dun breasts, however, are softer), provincial; 2nd, Brown Reds, most used for the pit; 3rd, Dark Greys, not common; 4th, Blood Piles, red eyes, yellow legs; 5th, Black-breasted Reds, dark birds, willow legs. Duckwings inferior there, and white-legged birds scarce, as are Whites. He says Game cocks run 6½ lbs. there as an average, which, I think, is heavy. This is a much higher weight than the old Cheshire white-legged or other Cheshire breeds used to average.

In London these three sorts were chiefly used for the pit:—1st, Brown Reds, most common and most used; 2nd, Dark Greys, hardest and best birds of all; 3rd, Black-breasted Reds, red eyes, white legs, with the wheaten hens. These last not quite so good.

In my own district in the country the strains stand as follows, as good winners in the pit at present:—1st, Red-breasted Ginger Reds, bright red eyes, yellow legs; cocks bright red, hens light ginger partridge colour, a peculiar provincial strain, bred in East Suffolk, and formerly at Newmarket, Cambridgeshire side. These have not been beaten for thirty-five years, and are very fast. 2nd, Dark Greys, grey breasts, the hardest birds of all; 3rd, Brown Reds, red-brown breasts, the most fought of all; 4th, Bright Red Blood Piles, marble-breasted cocks (bred from Ginger Red hens originally), with white legs and bright red eyes (the old Cheshire Piles).

Of these, Ginger Reds and Piles are quickest, and Dark Greys and Brown Reds the hardest. We have also two strains of Black-breasted Reds with willow legs and red eyes, with very red cocks, that beat the Brown Reds. The hens of one strain are wheaten, and in the other Partridge-coloured. Both are originally from Newmarket, and are, I think, the best in England.

I hear that yellow and willow-legged Piles are now preferred in some places to the white-legged. I prefer the white-legged as gamier birds myself. I also hear that English Game fowls are now fought in France, the French breeders near Paris buying them up through their agents in London, especially about Hanworth, Hounslow, and Hampton Court. I have been informed that the English jockeys at Paris have brought this about.

I have quoted a little though not much, from "British Sports," by Capt. Delamere Blaine, as to the Duke of Leeds's breed, and some of the titled breeders and the feeders' names. The characteristics of the fighting qualities, and the notes on Gilliver, are copied chiefly from the old sporting records in London and Newmarket, and will, therefore, be found to be quite correct. I have, however, chiefly quoted from my own notes and experience.—NEWMARKET.

PACKING EGGS.

HAVING read in your paper the letters of "CONSTANT READER" and Mr. Cooper, I can fully verify their statements as to the safety of packing eggs in sawdust; at the same time I wish to mention that the eggs when boiled taste of the sawdust. I now use bran.—J. G. I.

PRIZES FOR BRAHMA POOTRAS.

AT this season the committees of some of our leading winter poultry shows are revising their schedules to meet the growing claims of the more popular breeds. Permit me, very briefly, to remind secretaries and committees of the strong and general expression of public opinion which was manifested during the winter months by a great number of letters in your columns and elsewhere in favour of liberal and equal prizes to both Light and Dark Brahmas. These letters came from various sources, from breeders of one and of both varieties, from secretaries of shows, from those who were impartial and who kept no Brahmas at all. Differing as they did in their origin, they were heartily unanimous in their demand that the growing popularity of the Light birds should be recognised by their

being placed on a perfect equality, both as to cups and prizes, with the Dark Brahmas.

Managers of shows are usually observant of and anxious to meet the wants of the public. They may rest well assured of two simple facts—first, that no classes are more popular than those for Brahmas; secondly, that where equal prizes are offered to each variety there will be an equal if not a larger entry of light Brahmas. At Winchester the number of entries was, Dark, ten; Light, twelve!—OBSERVER.

CHICKENHOOD.

"EARLY chickens, or, indeed, chickens at any period of the year, are all very well for those who can have them, and for those who have patience to see after them," said a farmer's wife; "but patience is a rare thing now-a-days, not one girl in ten will take the trouble, 'bother' she calls it, to see to them. Why only last February I had eight Brahmas hatched as fine and strong and likely to live as any May birds; what does the housemaid do but stir up the kitchen fire in a temper. They none of them like birds, no, not one of them. I half fancy we should not, if we were in their place. Well, the chickens were never seen after that vigorous poke of the fire. Hot cinders tumbled out in profusion, fell into the basket, burned up blanket, and birds, and everything—nothing but a few charred embers could be found on the hearth."

Most people complain of failure in the rearing of chickens, and no wonder; very few know how to do it successfully, even of those who have tried for years. There are so many things to consider, so many chapters of accidents to pass through, and then the chickens are usually left to the care of men or boys, and the latter are no more fitted for the task than they would be to polish Dresden china. Then some owners of poultry do not let those in charge have the least chance of success. I am not speaking of the hatching of expensive eggs, or the rearing of chickens for show purposes—these are often overcared for, but of such as are kept in country homes for household use—reared, in fact, as an article of food.

Now, there is Squire Bentley; he delights in eggs and chickens, would have fresh-laid eggs on his breakfast table every day in the year, and chickens never come amiss to him, however dished up. He is quite sure his poultryman fails far oftener than he succeeds; they have few eggs, and half the birds hatched never attain any size. A few years ago he made considerable alterations in his grounds near the poultry-yard, and raised the adjoining road a foot higher than the yard, so that all the surface rain water from a large garden drained into it, consequently keeping the soil cold and damp, even when it had the appearance of being dry. No amount of generous feeding could overcome this evil, or in the matter of success, compete with indifferent food on a dry warm soil; and "yet," said the man, "master never thinks that a poor hen must provide herself with flesh and feathers, before she can think of eggs, or anything else. The poultry would soon pay the expense of raising the yard a few inches higher than the surrounding ground." But this Squire Bentley does not understand; it is an economy of Nature he has never studied, and, therefore, would not believe, and he looks upon the matter of raising the yard as so much useless trouble and expense.

There is also Mrs. Martin; she keeps poultry, not for the love of it, but from necessity, for living far away in the country she could not otherwise easily provide her household with eggs and chickens. The fowls are there as it were only on sufferance, for she does not wish them to be seen or heard. If there had been a kind of fowls, doing their work in silence, pullets that laid eggs in plenty, without rejoicingly proclaiming the news to equally noisy partners, they would have been the very sort for Mrs. Martin. As it is she has removed them as far as possible from her abode. Their roosting place is everything that can be desired, their run a fine large one covered over with wire, so that the smartest Hamburgh could not possibly escape; they are well fed, and have green food in abundance, yet they do not succeed. The chicks die off in numbers before they are a month old, and the henwife says she "cannot think how it is, for they have everything heart could desire." Two long rows of elm and beech trees interlace their branches over this poultry-yard, and make almost perpetual shade, so much so, that the fowls try in vain to catch a glimpse of the summer sunshine, so spend their days fretting when they should be nursing chickens.

Then there is Mrs. Thornton; she often loses her chickens not from the want of sunshine, or from the effects of a damp

soil, but from an injudicious mode of feeding. She is quite sure the little things can want for nothing when they roam at large with their mother, and feels no apprehension when the sloppy bread and water is eaten up but slowly, or when the meal stirred up with cold water settles down to the dish bottom, and after standing days must be thrown away. To scald their meal with milk, or to boil young chickens a few eggs now and then, just to carry them safely through a cold time, when some bitter east wind is turning the green grass brown, such would be an extravagance Mrs. Thornton would not submit to. So her birds fail, they have not strength to face adverse winds. They might live on through some summer of exceptional mildness; but chickenhood in England must encounter various gradations of warmth and cold, of damp and dryness, all extremes of which are injurious to them.

Now, there are some things, and they are very simple and inexpensive, perfectly indispensable in the successful rearing of chickens. They should have a good shelter from wind and rain, a run over fresh clean grass, and be kept close to the person who feeds and cares for them, and one person and one only should be responsible; divide the responsibility and you increase the chance of loss. They should be near so that they may be frequently fed, and the food should be taken away when they have eaten their fill, not left to be trodden into the grass or gravel, or stolen by birds. Now, if the chickens are reared a long way from the house, they will often be forgotten, will have to wait for their dinner until some storm is over, or it may be go supperless to bed. To leave food standing might seem to avoid this evil, but then it is wasteful to do so; it encourages a false appetite, a constant craving after dainties. The hen and her chickens should have a run to themselves, there should be no intruders, not even another hen with chickens, for the day of battle would come, and though the mothers might not harm each other, the chickens would suffer. Nor is it well to coop two hens near each other, and let the young ones wander abroad, for they might not always return to their own mother; then a skirmish would ensue, and the poor little birds would be terrified. Two hens with broods of about the same age were from necessity during a wet season sheltered in an old barn, the hens were confined to their coops, but the chickens were free to roam over the place; they were so nearly the size and colour of each other, that no evil result was anticipated. All went well for a time, then it was found that one mother had stolen all the chicks, wiled them away from their own mother. They were taken back to her, put under her wings in the dark—to no purpose they rushed back to their self-adopted mother on the first opportunity, and she, proud of her large family, stretched out her wings wide as they would spread, and yet vainly strove to cover four and twenty chickens, while the poor forsaken mother after grieving for a time made the best of her circumstances by beginning life anew.

It is also an unwise, yet a very common practice, to give a hen more eggs than she can well cover. It is a kind of greed very pleasant to indulge in, for most poultry-keepers are apt to count their chickens before they are hatched, yet the after-counting would average more if one less than the bird could easily cover, rather than more, were given to her. Many people fancy if the eggs are under the hen's wings they must do, forgetting that the hen can only spare a certain portion of heat, however fat and well feathered she may be, and it is possible to spread out that heat until its effective power is lost. If you wish your chickens to have their mother's care and shelter for some time, as in the case of Black Spanish, and the hen cannot stay too long with them, do not allow her to indulge too much in the chickens' food, for chopped eggs and such dainties are not necessary for her health, and would only put her into good condition too soon, and then she would find out that it was much pleasanter to have little chicks than big ones, and so think she would seek a new nest, and leave the old birds to do as they could.

Now, this pitiful time comes to all chickens when the old mother turns them adrift—a sad time it is for them, however big and strong they may have grown. She no longer answers their eager call, or warns them of coming danger, or catches flies for them, or waits aside from the food until their hunger is appeased. No, the flies and dainty bits are all for herself now. She does not appear to care in the least for her orphaned little ones, leaves them for the society of others like herself, and quietly trims out her disordered feathers on some sunny slope, suddenly grown deaf to their troubles. If she be an easy-tempered hen, she just leaves them alone, takes no

notice of them, or it may be for a time permits them to follow her, even to nestle close up to her at night; but then it is for her own sake, she likes their warmth. But the chances are that her leave-taking is once and for ever, and comes to them without any softening gradations. Then the poor birds wander up and down, making a piteous wail. Sometimes they stray far from their accustomed walks, and must be sought for, or they rush about after every upgrown hen, thinking they have found their lost mother, only to be sent away with little pecks and snaps, and angry tones. At this period of their lives they often meet with an untimely end; every stray chicken, notwithstanding the proverb, does not come home at night to roost.

In the warm summer evenings a leafy tree has more charms for them than the pent-up hen house. In such a position they are not safe from cats, to say nothing of storms that may suddenly come down upon them. At such times if they are considered of any value, they must be well looked after, counted up morning, noon, and night, and the person who feeds them will ever have most influence over them. Chickens may be so taught that they will obey the first sound of the voice, and come from a long distance in answer to it; but then to insure this, they must not be deceived—only called for when they are wanted to feed; and if this be done regularly, they quickly learn to seek their homes, not only for food, but for protection from dangers which they are not strong enough to battle with. This great change in their lives once safely over, they take upon themselves as it were an individual independent action, rely upon themselves, and grow up fast, and well repay the care and trouble bestowed upon them during the days of their chickenhood.—*MAUD.*

THORNE POULTRY SHOW.

THE arrangements of the Committee for this Show, held on the 17th inst., were admirable, and the generality of the specimens exhibited were such as are rarely met with. By the kind permission of Makin Durham, Esq., there was fully double the extent of show-ground as compared with that afforded on previous occasions, and the pens throughout being in single tier, the Exhibition was seen to great advantage. The weather being exceedingly clear and sultry, the birds appeared to suffer much from the continuous sunshine, and we noticed many exhibitors busily engaged fastening pieces of newspaper, and even pocket-handkerchiefs, to shade their particular pens; for the poultry, more especially about the middle of the day, panted from sheer exhaustion. This is a disadvantage that will ever attend out-of-door exhibitions where no shelter is provided, but constant heavy rains bring far more inconvenience; therefore, we can heartily congratulate the Managers on the favourable weather they this year enjoyed. The grounds, which have recently been laid out with great care and good taste, were thronged with a highly respectable company almost from the very hour of opening to the time of closing, and we understand that great promptitude was evinced in repacking the birds.

The competition in most of the classes would bear comparison with the largest of our poultry exhibitions, and though in a few instances mounting was rapidly progressing, the generality of even the Game fowls proved to be in excellent hard feather and condition. The classes devoted to birds of the current year were well filled, and with specimens very nearly at maturity, consequently this portion of the Show proved most attractive. The sales effected through the number of pens "claimed," was considerably in advance of former years, and in the "Selling classes" great numbers changed hands.

SPANISH.—First, H. Beldon, Bingley. Second, J. Thresh, Bradford. Highly Commended, Messrs. Burch & Boulter, Sheffield. Commended, Messrs. T. C. & E. Newbitt, Epworth; E. Brown, Sheffield.

COCHIN-CHINA.—First, C. W. Brierley, Middleton. Second, T. Stretch, Ormskirk. Highly Commended, C. W. Brierley; W. A. Taylor, Manchester; W. Harvey, Sheffield.

BRAHMA POOTRA.—First, E. Leech, Rochdale. Second, F. E. Hoyle, Hooton Levett. Commended, Lady Hawke, Womersley.

DORKING.—First, H. Pickles, jun., Skipton. Second, J. Elgar, Newark. Highly Commended, W. H. King, Rochdale; H. Beldon.

GAME (White and Piles).—First, J. W. Thompson, Southwam. Second, Messrs. G. & C. Furness, Acerington. Highly Commended, Messrs. Sales & Bentley, Crowle.

GAME (Black-breasted and other Reds).—First, C. W. Brierley. Second, Messrs. Sales & Bentley. Commended, B. Jarvis, Mansfield.

GAME (Duckwings, and other Greys and Blues).—First, J. Mason, Worcester. Second, E. Aylroyd, Bradford.

GAME (Any breed).—First and Cup, E. Aylroyd. Second and Third, J. Fletcher, Stoneclough. Highly Commended, H. M. Julian, Hull.

GAME COCK (Any breed).—First and Cup, C. Challenger, Steeley. Second, H. M. Julian. Third, W. H. Wheeler, Carlton.

HAMBOURG (Silver-spangled).—First and Second, H. Beldon. Highly Commended, H. Pickles, Skipton.

HAMBOURG (Golden-spangled).—First and Second, H. Beldon. Highly Commended, J. S. Senior, Dewsbury.

HAMBOURG (Silver-pencilled).—First, H. Beldon. Second, H. Pickles, jun. Highly Commended, H. Beldon; Messrs. W. & J. Barstow, Bingley.

HAMBOURG (Golden-pencilled).—First, J. R. Jessop, Hull. Second, H. Beldon. Highly Commended, Messrs. Burch & Boulter, Sheffield.

ANY OTHER VARIETY.—First, H. Beldon (Polands). Second, J. S.

Senior. Highly Commended, W. Harvey. Commended, Rev. G. Hustler, Stillingfleet (Malaya).

GAME BANTAMS (Any breed).—First and Cup, W. F. Entwistle, Leeds. Second, E. Toder, Little Carlton. Third, J. S. Senior.

BANTAMS (Silver or Golden-laced).—First, T. C. Harrison, Hull. Second, W. Charter, Driffield.

BANTAMS (Black, White, or any coloured).—Second, Messrs. S. & R. Ashton, Mottram. Highly Commended, T. Burgess, Brighouse. Commended, J. R. Jessop; T. J. Charlton, Bradford.

BANTAMS (Any breed).—Cock.—First, H. Beldon. Second, W. Harvey (Polands). Highly Commended, J. Barnett, Walsall; J. Cousins, Allerton Park (Game Bantam). Commended, Rev. G. Hustler (Dorkings); E. Brown, Sheffield; J. S. Senior; W. Bearpark, Ainderby Steeple, North-Allerton. Hen.—First, J. White, Warbury. Second, J. Thresh, Bradford.

Highly Commended, W. A. Taylor, Manchester. Commended, E. Brown, Sheffield; J. S. Senior. Chickens.—First, E. Aylroyd. Second, J. Somerville, Rinford Abbey. Highly Commended, C. W. Brierley; W. R. Roberts, Barnaby; J. Jackson, jun., Inghitehworth; W. Harvey.

GUINEA FOWLS.—First, T. C. Harrison, Hull. Second, H. Merkin, Driffield. Highly Commended, Miss A. Jackson, Bankside; Miss Chester, Dykesmarsh; N. Biney, Manchester.

TURKEYS.—First, H. Merkin. Second, Lady Hawke, Womersley.

GEES.—First, J. White, Whitley (Toulouse). Second, O. A. Young, Driffield. Highly Commended, Rev. G. Hustler. Commended, W. White, Whitley (Toulouse); J. Somerville.

GUINS.—First, Mrs. J. Furniss, Crowle Wharf. Second, Lady Hawke. Highly Commended, Miss B. Aldam, Epworth; Lady Hawke; J. Hepworth, Bearswood Green; H. Hepworth, Bearswood Green.

DUCKS (Any breed).—First, T. C. Harrison (Pintails). Second, C. W. Brierley, (Teals). Highly Commended, W. Charter, Driffield (Muscovy). Commended, Lady Hawke.

DUCKS (Aylesbury).—First, Rev. G. Hustler.

SELLING CLASS.—First, W. A. Taylor, Manchester. Second, J. S. Senior. Highly Commended, G. Holmes, Driffield.

PIGEONS.

CARRIERS.—First, H. Yardley, Birmingham. Second, W. Harvey, Sheffield. Highly Commended, E. Horner, Harewood; J. Deakin, Sheffield.

CROPPERS.—First, W. Harvey. Second, H. Yardley, Birmingham. Highly Commended, J. Hawley, Bingley.

TUMBLERS.—First and Second, J. Hawley. Highly Commended, T. Balderstein, Derby. Commended, E. Brown, Sheffield.

JACOBIANS.—First, J. Thompson, Bingley. Second, Messrs. T. C. & E. Newbitt, Epworth. Highly Commended, J. Crossland, Huddersfield; E. Horner, Harewood.

NEWS.—First, J. Thompson. Second, R. Moll, Hull. Highly Commended, J. T. Lishman, Gillingham; E. Horner. Commended, O. A. Young.

TRUMPETERS.—First, E. Horner. Second, J. Hawley. Commended, E. Horner.

TERBITS.—First, E. Horner. Second, J. Thompson. Highly Commended, E. Horner. Commended, J. T. Lishman; T. Stather, Hull; H. Yardley; J. Thompson.

FANTAILS.—First, J. Hawley. Second, H. Yardley. Highly Commended, J. T. Lishman; E. Horner. Commended, Master C. Moll.

OWLS.—First, Miss F. Easton, Hull. Second, A. Dove, York. Commended, Master C. Moll.

BARBS.—First and Second, E. Horner. Highly Commended, A. Dove, York; E. Brown, Sheffield.

SELLING CLASS.—First, J. Hawley. Second, J. Deakin, Sheffield. Highly Commended, C. Gravel, jun., Thorne; Messrs. T. C. & E. Newbitt; E. Horner. Commended, G. Kenyon, jun., Thorne; T. Balderstein, Derby; T. Stather; E. Horner.

RABBITS.

LOP-EARED (Buck and Doe).—First, A. H. Easton, Hull. Second, C. Gravel, Thorne.

LOP-EARED (Buck).—First, A. H. Easton. Second, H. Yardley, Birmingham. Highly Commended, C. Gravel.

LOP-EARED (Doe).—First, G. Jones, Birmingham. Second, C. Gravel. Highly Commended, A. H. Easton. Commended, W. Grant, Doncaster.

HEAVIEST.—First, J. Taylor, Sheffield. Second, A. H. Easton. Highly Commended, H. Gravel. Commended, G. Jones.

EXTRA CLASS.—First, J. A. Rowland, Doncaster (Himalayan). Second, A. H. Easton (Silver-Grey). Highly Commended and Commended, C. Gravel.

The longest ears were 2½ inches, and the widest, 5 inches, easy measurement; and the heaviest Rabbit, 13½ lbs.

The Judges were Mr. Edward Hewitt, of Sparkbrook, Birmingham; and Mr. E. Hutton, of Pudsey, near Leeds.

GLASGOW AGRICULTURAL SOCIETY'S SHOW.

THIS Society held its fourteenth annual Show on the 10th of June, in the Cattle Market. The Exhibition was well patronised, the weather being fine.

The show of poultry was very small. The Society making it a rule that persons wishing to exhibit must pay a subscription of 10s., and an annual subscription of 5s. before being allowed to exhibit any kind of stock, there is no inducement to send birds for competition where a first prize is 20s., and for Bantams 10s. It is a great mistake to require exhibitors of fowls to pay the same entry money as those who enter cattle or horses, the prizes for the latter being from £3 to £6. This drawback must prevent many exhibitors who would willingly send birds from taking any interest in the Show, and deprive visitors of the pleasure of witnessing a good competition. Besides the sum mentioned, exhibitors are required to pay 5 per cent. on prize money, and provide pens for their own birds. It is to be hoped that more satisfactory arrangements will be made by next season.

Dorkings were not extraordinary. Cochins were very good. Hamburgs and Scotch Greys were fair. The first and second pens of

Game were good. *Bantams* were very middling, one of the hens in the first-prize pen (Black Red Game), having white earlobes. *Ducks* were very good.

The following is the prize list:—

DORKING.—First, H. Heys, Barrhead. Second, J. Logan, Eastshield, Carnwath. Third, Miss E. Oswald, St. Quivox, by Ayr.

COCHIN-CHINA.—First and Third, J. Stuart, Thistlebank, Helensburgh. Second, Miss E. Oswald.

HAMBURGH (Golden).—First, W. Thomson, Glasgow. Second, J. Logan. Third, R. Wilson, Forchouse, Kilbarchan.

HAMBURGH (Silver).—First and Second, J. Logan. Third, J. H. McNab, South Arthurrie, Barrhead.

SPANISH.—First, J. Logan. Second, M. Henderson, Ardrossan. Third, J. H. McNab.

SCOTCH GREY.—First, R. Wilson. Second, H. Heys. Third, J. Logan.

GAME.—First, H. Heys. Second, D. Gellatly, Meigle. Third, J. Logan.

BANTAM.—First, Miss E. Oswald. Second, R. Wilson. Third, D. Gellatly.

ANY OTHER BREED.—First and Second, J. Logan. Third, J. H. McNab.

DUCKS (White Aylesbury).—First, J. Dryburgh, Arkleston, Paisley. Second, H. Heys. Third, A. Bulloch, Milliken, East Kilpatrick.

DUCKS (Rouen).—First, J. H. McNab. Second, R. Wilson. Third, J. Logan.

ANY OTHER VARIETY.—First, Second, and Third, J. Logan.

GESE.—Prize, H. Heys.

HATCHING RESULTS.

Seeing that you have details of hen and chicken progress, I offer my mite of information in the same department, believing you will not receive a more successful report during the year. My nine hens and one cock are Cochins and Dorkings.

Sitting.	Date.	No. of Eggs.	Chickens.
1	January 8.	11	3
2	January 24	13	5
3	February 4	11	6
4	February 13.	11	10
5	March 17	13	12
6	March 22	13	7
7	April 4	13	13
8	April 6	13	10
9	May 9.	13	10
10	May 15	14	14
11	May 15	13	11
12	May 17	13	11

One Dorking hen has not yet sat at all. I have no grass run for them, but a cribbed and narrow space for hens and chickens; and added to the above, I have had 582 eggs laid.—*ADELE DE SÉNANGES, Tunbridge Wells.*

ENTRY FEES AND PRIZES FOR PIGEONS AT POULTRY SHOWS.

AFTER carefully analysing the results of several poultry shows held last year, and examining prize lists of forthcoming shows, I am confirmed in the opinion I have held for some time—that exhibitors of Pigeons have not justice done them at the generality of poultry shows. I took up four catalogues, one each from the north and west of England, and two from the east. In three of them the Pigeon exhibitors paid for entry fees the amount given in prizes within a fraction, and in the fourth the fees exceeded the value of the prizes; and yet at the same shows the amount given in prizes for poultry exceeded the entry fees in one case by £10, another by £60, and in one by nearly £100.

The charges for Pigeon pens are not proportionate to the prizes when compared with those for the poultry. I have before me a prize list of a forthcoming show where the entry fees for a single pen of poultry will be 10s., but that pen has the chance of winning a cup value £5 5s; whereas for a single pen of Pigeons the fees are 8s., and the highest prize to be gained by that pen is £1.

I think, as a rule, committees copy prize lists without giving themselves the trouble to look at the matter, otherwise such charges would not be repeated time after time; for I am convinced that there are first-class business men on many committees who would without reference to any other list lay down a scale of fees and prizes on business principles that would be more equitable, and give greater satisfaction to all classes of exhibitors.—*L. WREN, Lowestoft.*

ARTIFICIAL SWARMING IN COMMON HIVES.

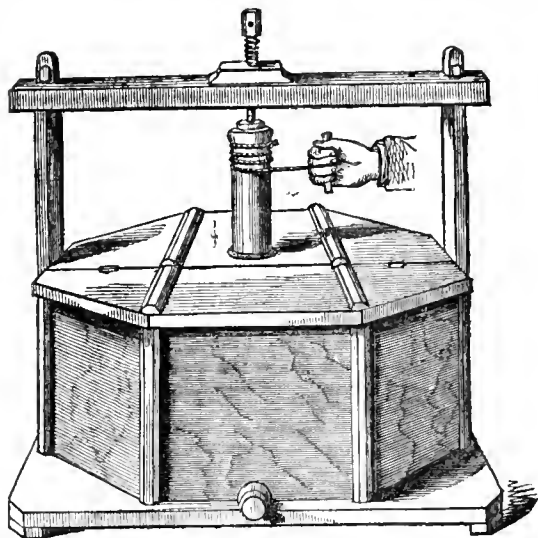
Would you be kind enough to inform me in what way I could make my bees swarm? I have sixty old stocks, and have had only four swarms out of the lot. Some have been hanging out at the mouth of the hive for a month. They are all very heavy, and I have no doubt that they are full of honey. I am

sorry to trouble you, but as I take a great interest in bees, I should feel obliged by a little information.—*J. M. E.*

[The best mode of making artificial swarms when common hives are used has been repeatedly described in our columns—first by Mr. Woodbury, in No. 161, then briefly recapitulated in reply to a correspondent in No. 271, and, lastly, detailed by "B. & W.," in page 179 of our present volume.]

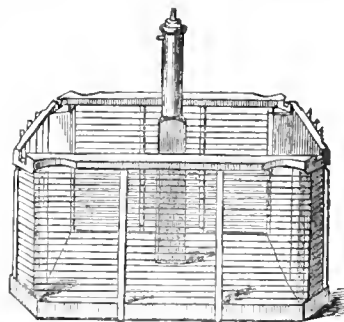
THE GERMAN CENTRIFUGAL HONEY-EXTRACTING MACHINE.

THE external appearance of this apparatus is well represented in the engraving, which is taken from a machine which was made to my order in Germany, and which is fitted to accom-



modate four of my frames. It consists of an octagonal box made of inch wood 2 feet 3 inches in diameter outside, by 12 inches deep, which rests on a square platform with oaken cross-pieces underneath at each end to prevent warping, and cut thicker at the back than in front, so as to give the whole a slight inclination forwards. The cover is also formed of inch wood, and is moveable, being merely fitted on without being fastened in any way, whilst the front part is hinged so as to be readily lifted for the purpose of inserting full combs and removing empty ones. The two uprights on either side are 20 inches high, and with the cross-bar at the top are made of 1½-inch wood 4 inches wide, the tops of the former being morticed through the ends of the latter, and secured by keys driven through the tenons. A 1½-inch hole in front, stopped by a turned wooden plug, affords the means of drawing off the honey after it has been extracted from the combs.

The internal apparatus which is represented in the annexed engraving, consists of a



The machine is used by standing four combs, from which

the cell covers have been previously sliced off, inside the gratings formed by the strained fishing-line; and then hitching the spliced eye of a stout cord on an iron pin near the top of the spindle, the latter is slowly turned round so as to wind the cord upon it. A fulcrum being then obtained by placing the left hand on the machine, the cross-handle attached to the other end of the cord is grasped in the right, and a vigorous pull sets the four combs spinning at such a rate that they are speedily half emptied of their liquid contents. When this is effected the combs are turned round, and another spin completes the job by emptying the cells on the other side.—A DEVONSHIRE BEE-KEEPER.

IMPROVED WAX-MELTING APPARATUS.

WILL you or any of your numerous subscribers kindly inform me the best way of making beeswax?—IGNORAMUS.

[I have recently had a wax-filtering pot made in tin, which has a moveable strainer somewhat more than half way up from the bottom. It is used by filling the lower part with combs, which are kept down by the strainer. Water being then poured in until the strainer is submerged an inch or two, the pot is placed on the fire and boiled for some time, when the wax rising to the top may be poured off in a tolerably pure state. I pour all the liquid contents of the pot into a large pan three parts full of cold water, in which the wax solidifies. All the refuse having been thrown away the wax is then collected, tied up in a bit of muslin, and placed on the top of the strainer. A small quantity only of water being put in the pot, the whole is again placed on the fire and boiled until the wax has melted through the muslin, when it may be poured into a mould, and the process is complete. I derived the idea of this apparatus from the description which Dr. Bevan gives of the one used by him, aided also by the inspection of one shown in the German department of the International Exhibition of 1862. I have, however, contrived some essential improvements, especially as regards the prevention of the combs burning and adhering to the bottom. This pot can be readily made by any ordinary workman; but as it is difficult to give precise directions for manufacturing it, I think of having a few made by my own tinman, and will forward one to any address on receipt of post-office order or stamps for 5s.—T. W. WOODBURY, Mount Radford, Exeter.]

RHUBARB WINE.

COULD you favour me with a receipt for rhubarb wine? Which is the better plan—to boil the rhubarb in the water, or to steep the cut rhubarb in the water for a certain time, and not boil? I have met with a failure in both ways.—ECONOMIST.

[The following produces the best wine, is the most successful receipt we know, and is an answer to your query.

Take of rhubarb stalks (unpeeled) 60 pounds.
 „ loaf-sugar „ 30 pounds.
 „ red argol (powdered) „ 4 ounces.
 „ water, a sufficient quantity.

The rhubarb stalks should be bruised one by one with the mallet against the side or bottom of the tub. Four or five gallons of cold water should then be poured upon them, in which they should be allowed to macerate for twelve or sixteen hours. The stalks should now be put into the press, and all their juice pressed out. This, with the liquor in which they were macerated, together with the sugar and the argol, should be mixed in the tub, and the quantity made up to ten and a half gallons by the addition of cold water. (It would save trouble in measuring, if a mark were previously placed in the tub to indicate when this quantity was contained in it.) This mixture is the artificial “must.” The tub should now be covered with a blanket, and placed in a temperature of from 55° to 60°. Here it may remain, being occasionally stirred, for two or three days, according to the symptoms of fermentation it may show; it should then be poured off, straining it through flannel into the cask, which should be filled to the bung-hole, and placed across the tub, in order that the scum and yeast which will be thrown off may be caught and removed. The superabundant must, which will be one and a half gallons, must be poured into the jar, in order that as the fermentation in the cask proceeds, and the liquor diminishes, there may be a supply in readiness to fill up the cask, which must always be kept full or nearly so. In about a fortnight

the bung may, most probably, be put loosely in, and in another week firmly fixed, and the cask placed in the cellar; but this of course depends upon the state of the wine. If the sweetness has disappeared, or nearly so,—or if, on the saccharometer being placed in it, the index marks a specific gravity of about 40,—the wine has fermented far enough for cellaring; if it has not reached this point, the wine should be well stirred, and the temperature kept up to promote further fermentation. In a month or six weeks after cellaring it may be fined and drawn off into a clean cask, or the same properly cleaned and, if necessary, sulphured to stop further fermentation, before the wine is returned. The cask may now be finally stopped close, and if an effervescent wine be desired, allowed to remain until March, when it should be bottled, the corks wired, and the bottles laid down. But if a still wine, like hock, be desired, no other year in the wood, or even more, will be advantageous.

The only difficulty about this process is to find out the precise period at which the fermentation has reached the desired point. The saccharometer will show this correctly. About 35, as marked on the scale of Thompson's saccharometer, would indicate proper attenuation for wine intended to be effervescent; if it is to be still and dry it may be lower—25 to 30. But the taste may be educated so as to form an approximation to truth. As long as sweetness exists to any extent the fermentation is incomplete, and after eating a small piece of crust most persons may readily detect the presence of too much sugar in the wine. In this case the wine should be shaken or stirred, that the wine may “feed,” as it is termed, on the lees; fining, on the contrary, will check fermentation; and when it has gone far enough, sulphurous acid gas stops it, as in the process of “sulphuring,” which may be readily done by burning a few sulphur matches within the bung-hole, the cask being inverted.

Fining is generally performed by means of isinglass previously dissolved, or partly so, in a little of the wine. About a drachm of isinglass so dissolved and poured into the bung-hole, the upper part of the wine being stirred at the same time, will probably be found sufficient.

Thompson's saccharometer is costly; but a simple glass one, quite sufficient for our purpose, may be procured for a few shillings. It is called Roberts' Saccharometer.

In using this saccharometer, two things are necessary to be observed:—1st. The temperature of the liquor to be examined must be 60°; and 2nd, the division on the scale must be multiplied by 5 to obtain the correct specific gravity. For instance, should the must raise the instrument to 24°, as marked on the scale, multiply 24 by 5, and you will prove the gravity to be 120; about the proper gravity of the must, before fermentation begins.

As a rule it may be observed, that the finer the sugar, the more alcohol is produced from it. It may be noted, that as the rhubarb juice will iron mould linen, care should be taken when the stalks are bruised.]

OUR LETTER BOX.

BLACK RED GAME BANTAMS' EARLOBES (T. D.).—The colour of the earlobes of Black Red Game Bantams is not essential, but we should prefer them red.

SILVER HAMBURGERS (J. W.).—The accidental loss of an eye is a mere disadvantage in competition; it is never a disqualification. We do not believe it is possible to tell the sex of the chicken from the shape of the egg. We do believe the earlier eggs produce more cocks than later ones. We should prefer the April to the July chickens.

BEE'S NOT SWARMING (A Beginner).—Swarming appears to be very capricious this season. Many issued early in our own neighbourhood, but we have ourselves ordered swarms from four different bee-keepers, and up to the present time have received but two from one of them. You may possibly by the time this appears have had a swarm; if not, it might, perhaps, be well to buy a stock or a swarm that has already been bived. In the latter case it will be better to wait until the weather become cooler before removing it. You will see that a corresponding states that he has had but four swarms from sixty stocks.

POULTRY MARKET.—JUNE 24.

The supply is better, and the trade improves. Hot weather always increases the demand for poultry. As it also spoils a large quantity, it tends to keep up the price.

	s	d	s	d		s	d	s	d
Large Fowls.....	4	6	to	5	0	Pheasants	0	0	0
Smaller do.	3	6	4	0	0	Partridges	0	0	0
Chickens	2	0	2	6	0	Guinea Fowls	0	0	2
Ducklings	6	0	6	6	0	Hares	0	0	0
Goats	2	6	3	0	0	Rabbits	1	4	1
Pigeons	0	8	0	8	0	Wild do.	0	8	0



3 5185 00266 2706

